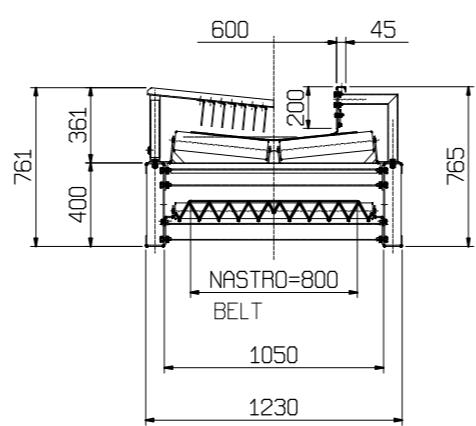
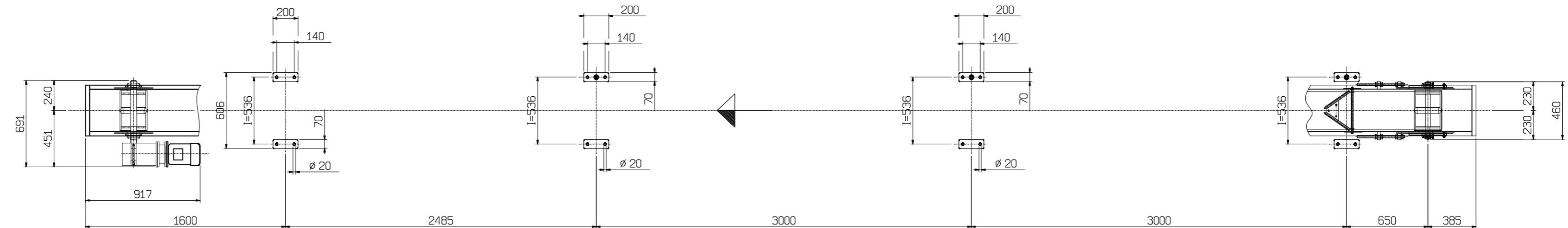
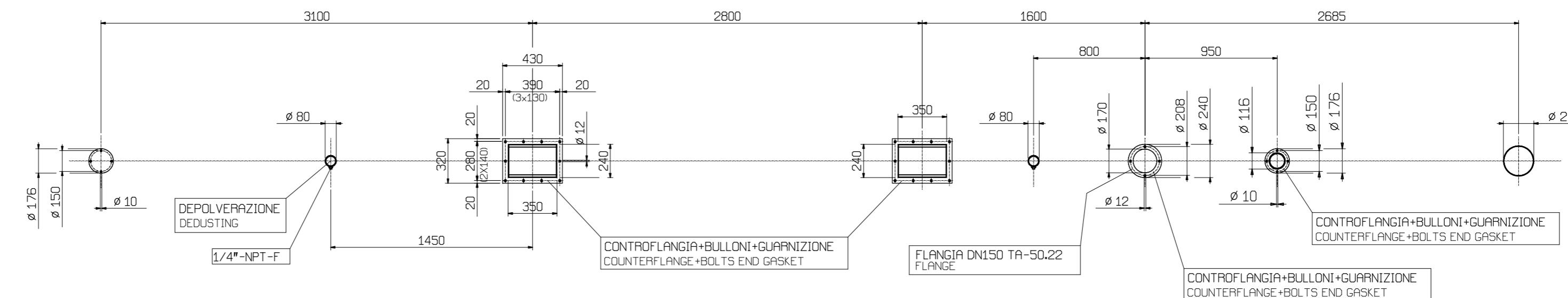
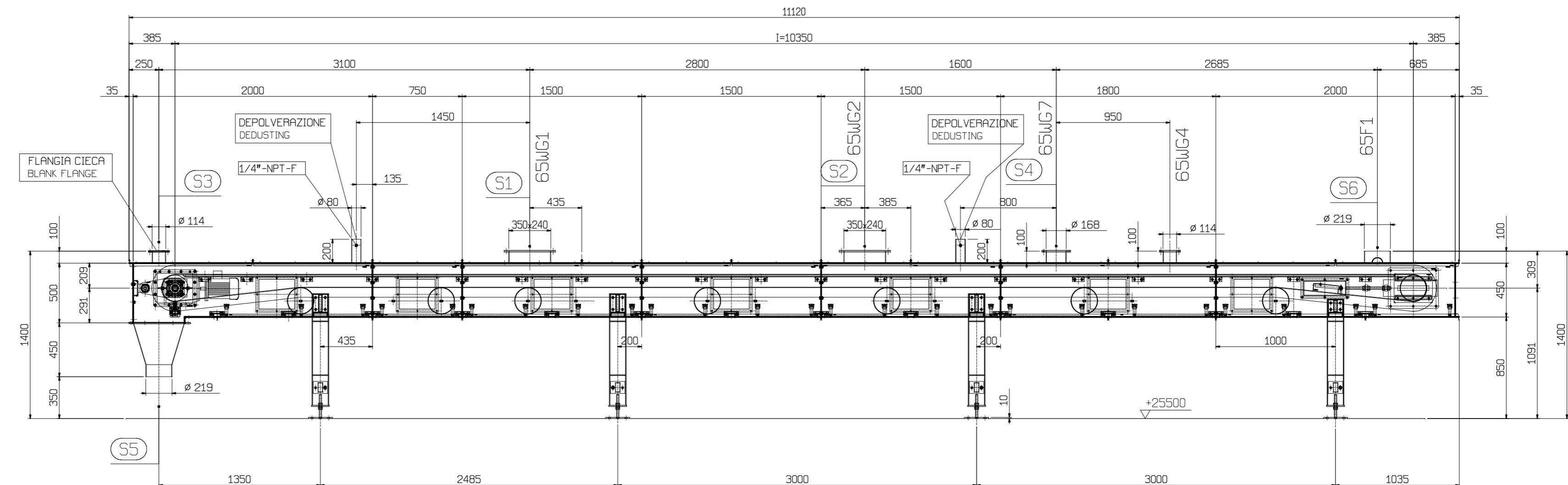
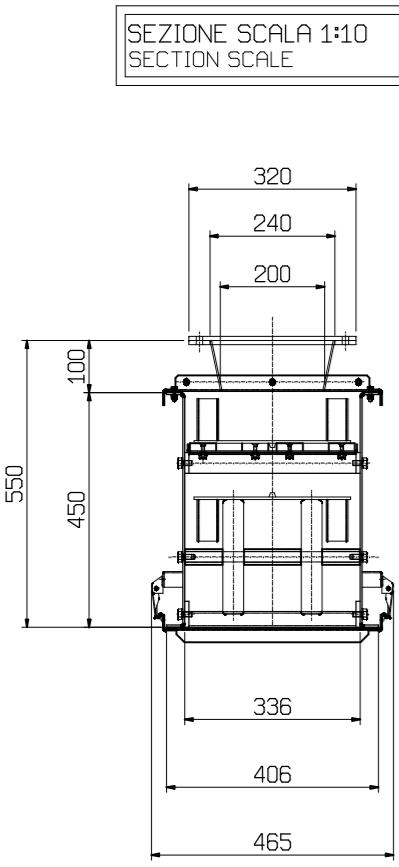


SEZIONE
SECTION



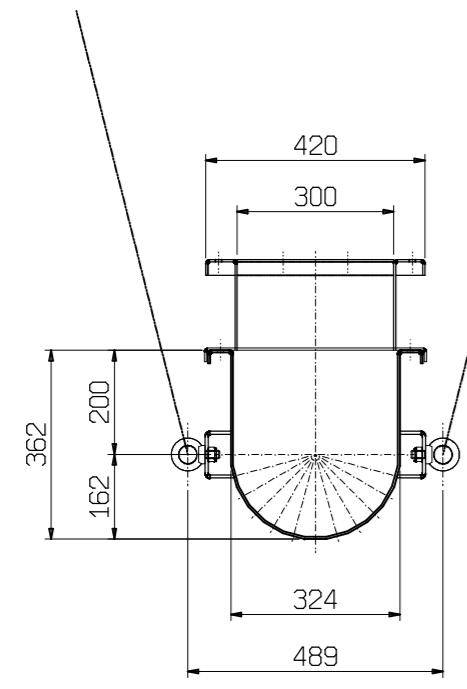
FINAL ISSUE

2150	1			64N1
PESO KG. WEIGHT KG.	NPEZZI NPPIECES	MATERIALE / MATERIAL	CODICE / CODE	ITEM
NOTE comm. 12193	COMM.N. JOB.N.	2F11	BARBIERI MODENA	COSTRUZIONI MECCANICHE ITALY
	SCALA SCALE	1:25		
TITOLO	TRASPORTATORE A NASTRO DA 800 I=15400			DISEGN. DRAWN
TITLE	BELT CONVEYOR WIDTH 800 mm CL=15400			CANE'
SOST.IL N.	097-012-125	DISEGNO N.		
SOST.DAL N.		DRAWING N.	NPF80181-000	
I disegni sono di proprietà della ditta BARBIERI che ne vieta la riproduzione e divulgazione				

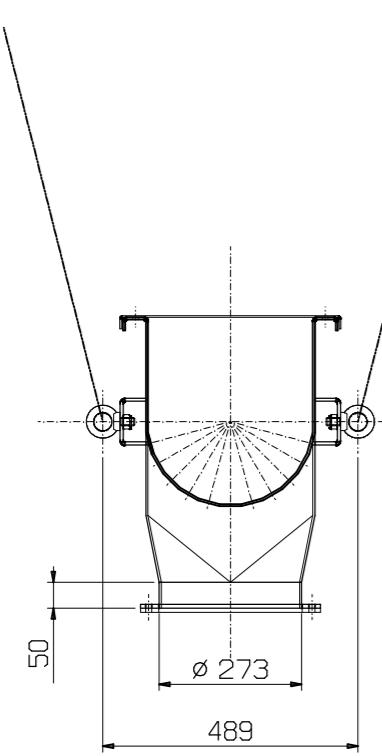


DEFINITIVO
FINAL ISSUE

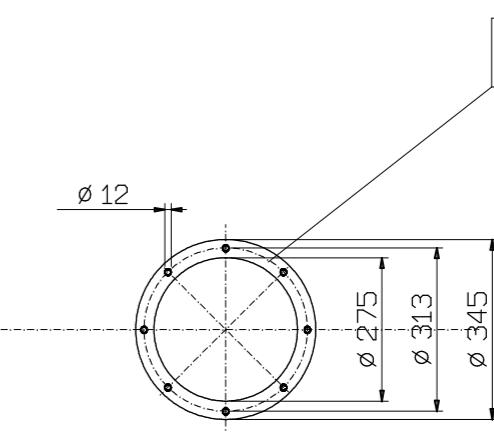
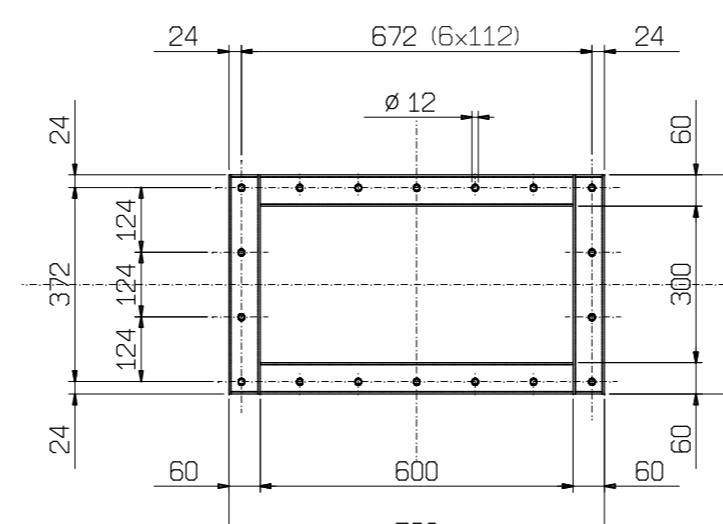
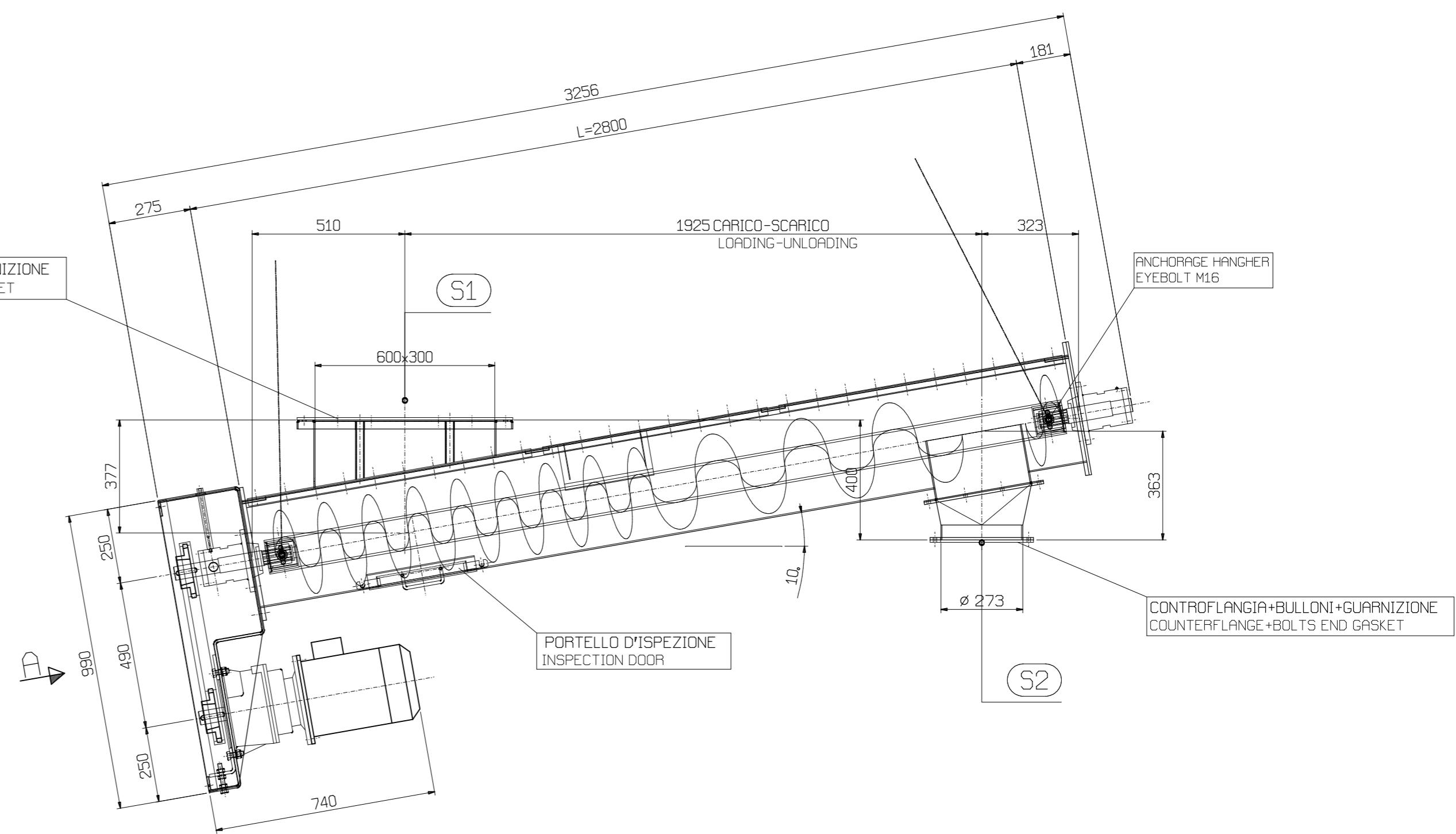
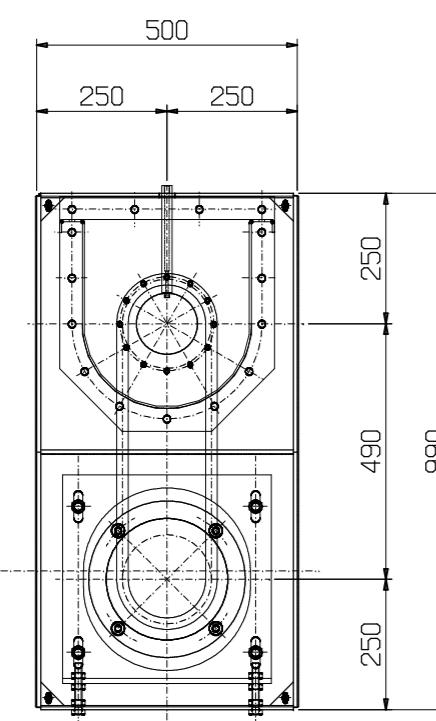
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COMM. JOB N.	2F11					CODICE / CODE
SCALA SCALE	1:20					DATA DATE 25-07-12
NOTE Comm: 12194						DISEGN. DRAWN. MW/CP
TITOLO TITLE	TRASPORTATORE A NASTRO DA 300 mm I=10350 mm					BARBIERI COSTRUZIONI MECCANICHE MODENA ITALY
SOST.IL N. DRAWING N.	097-012-126-R2					DISEGNO N. DRAWING N. NPF3081-000
SOST.DAL N.						I disegni sono di proprietà della ditta BARBIERI che ne vieta la riproduzione e divulgazione



CONTROFLANGIA+BULLONI+GUARNIZIONE
COUNTERFLANGE+BOLTS END GASKET

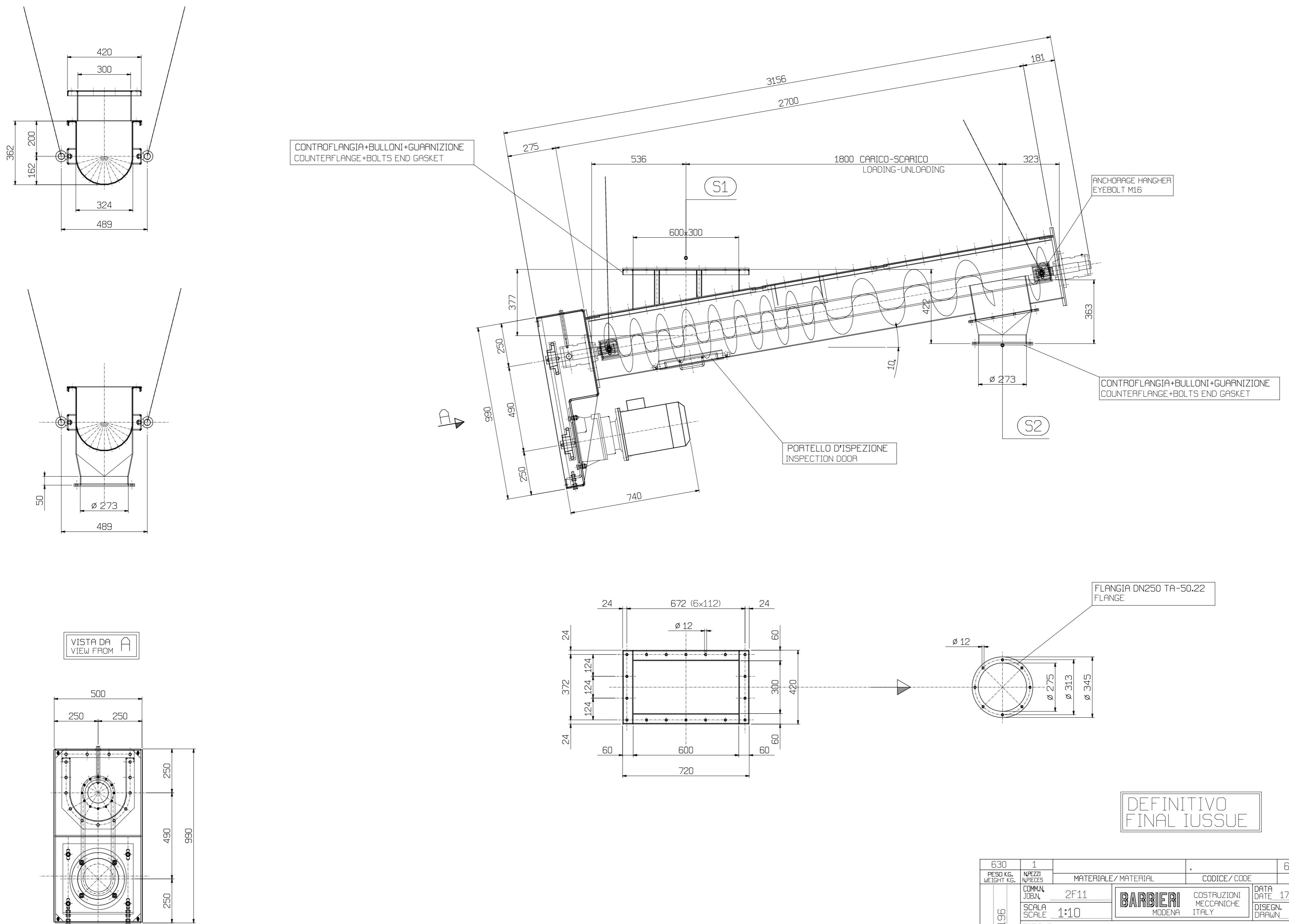


VISTA DA
VIEW FROM A

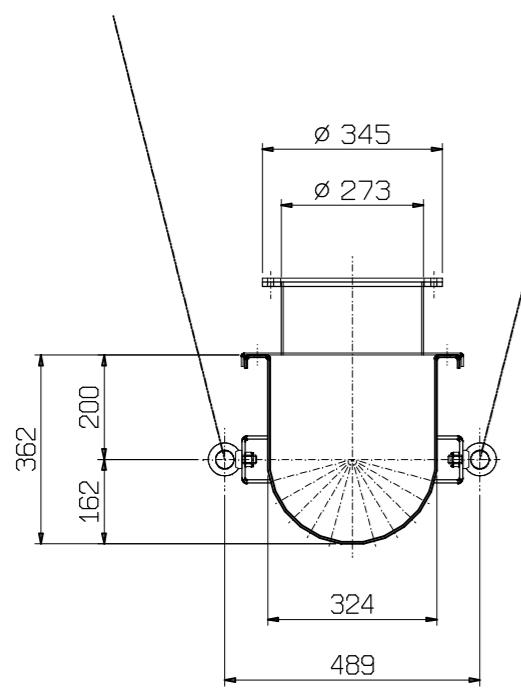


DEFINITIVO
FINAL ISSUE

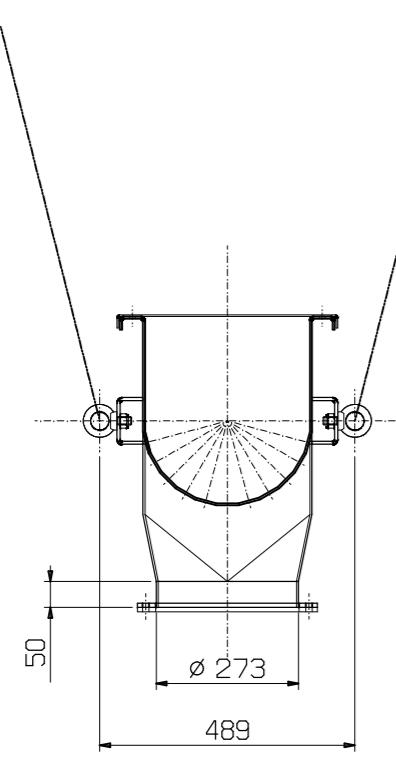
640		1			62CL1
PESO KG. WEIGHT KG.	N.PEZZI N.PIECES	MATERIALE / MATERIAL	CODICE / CODE	ITEM	
COMM. JOBN.	2F11				
SCALA SCALE	1:10				
TITOLO TITLE	COCLEA A CANALE CON ELICA Ø 300 L=2800 mm SCREW CONVEYOR Ø 300 L=2800 mm				
SOST.ILN. SOST.DAL N.	097-012-127	DISEGNO N. DRAWING N.			
				041-800-000	
NOTE: Comm:	12195	MECCANICHE ITALY	DATA DATE	17-04-12	
		BARBIERI MODENA	DISEGN. DRAWN	MW/CP	
		I disegni sono di proprietà della ditta BARBIERI che ne vieta la riproduzione e divulgazione			



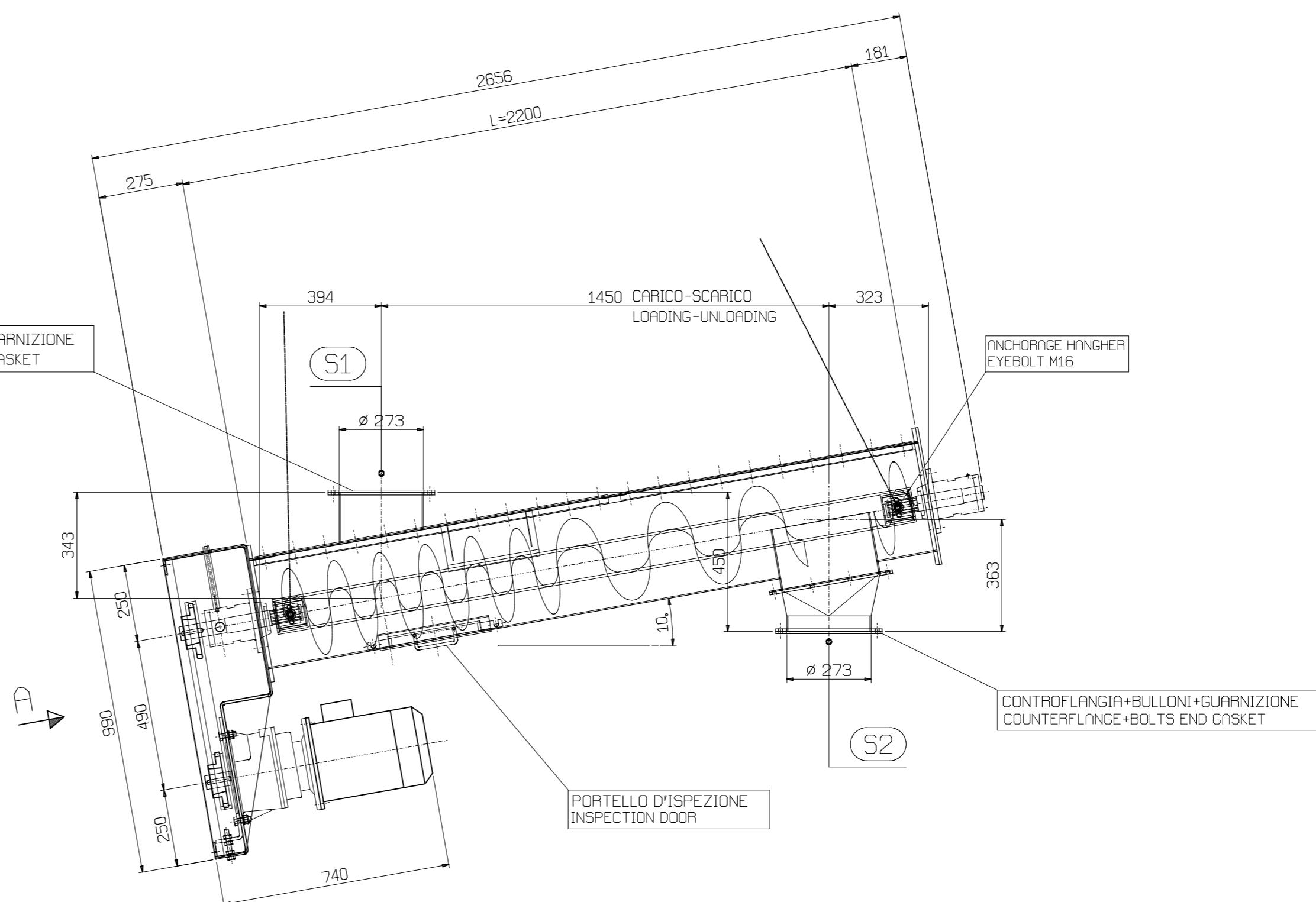
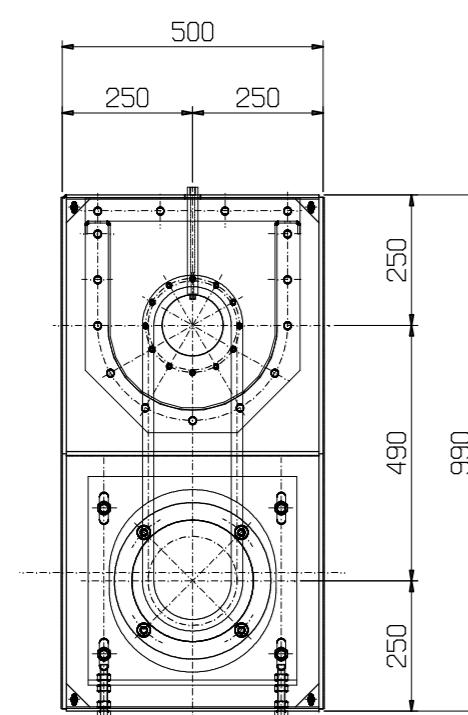
630	1	PESO KG. WEIGHT KG.	N.PEZZI N.PIECES	MATERIALE / MATERIAL	*	62CL2
COMM. / JOB.N.	2F11				CODICE / CODE	
SCALA / SCALE	1:10				DATA / DATE	17-04-12
TITOLO / TITLE	COCLEA A CANALE CON ELICA Ø 300 L=2700 mm				DISEG. DRAWN	MJ/CP
SOST.ILN. / SOST.DAL N.	097-012-128				DISEGNO N. / DRAWING N.	041-801-000
I disegni sono di proprietà della ditta BARBIERI che ne vieta la riproduzione e divulgazione						



CONTROFLANGIA+BULLONI+GUARNIZIONE
COUNTERFLANGE+BOLTS END GASKET



VISTA DA
VIEW FROM A

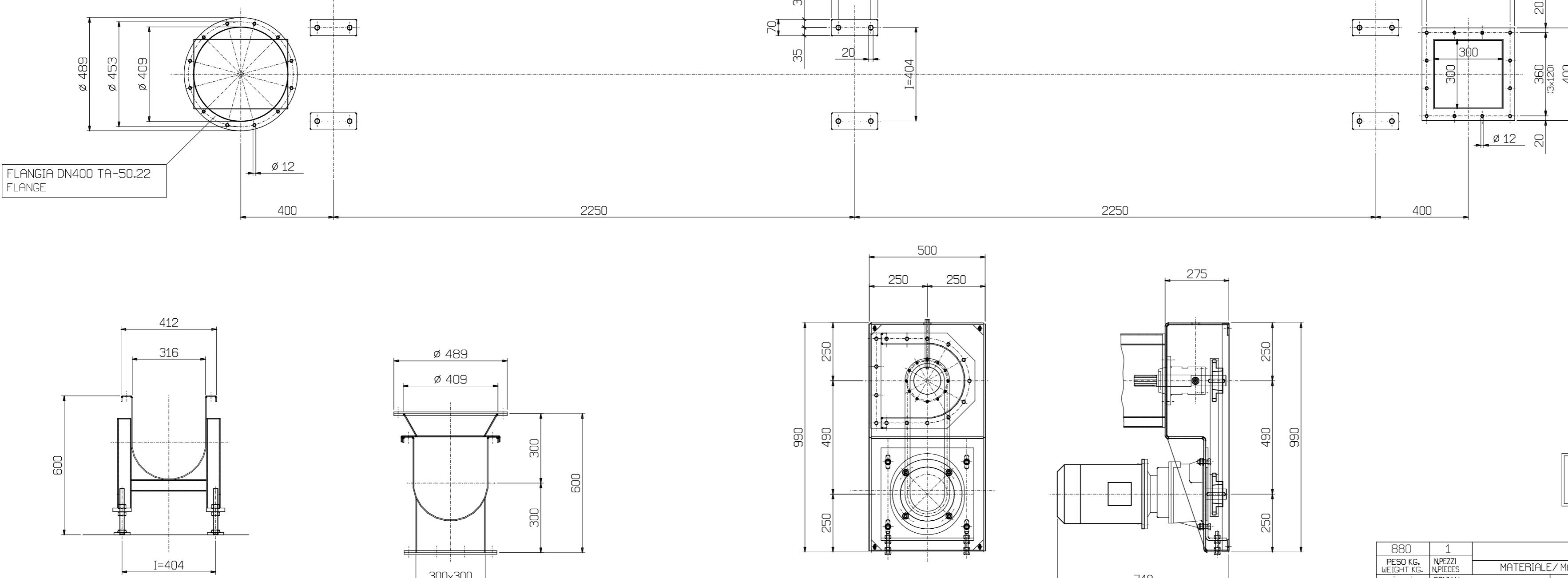
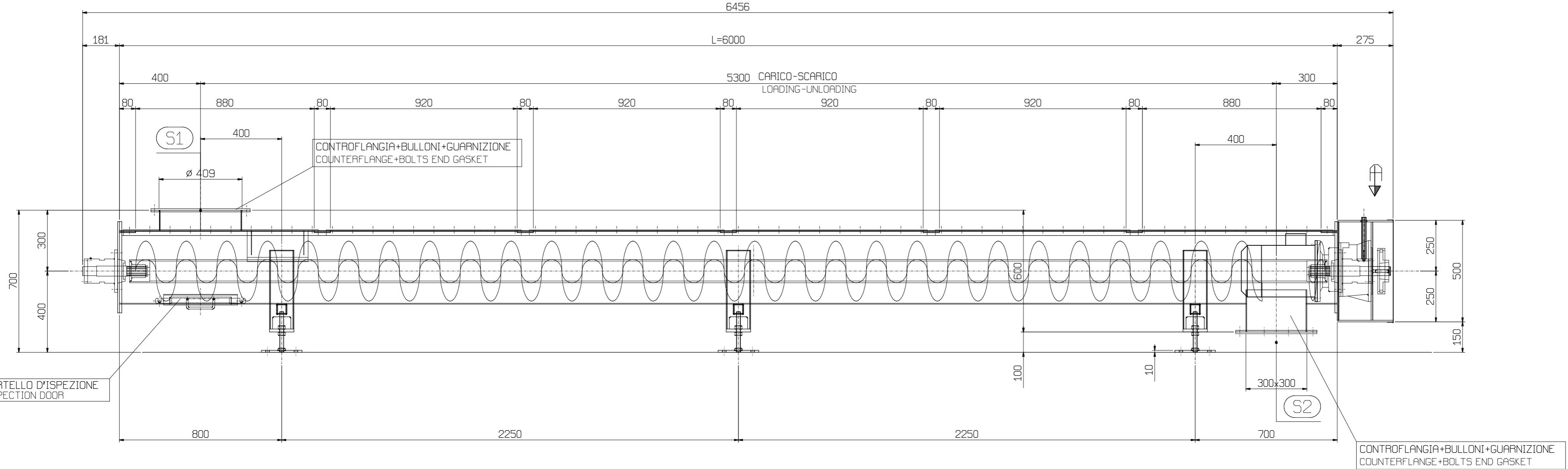


FLANGIA DN250 TA-50.2
FLANGE

FLANGIA DN250 TA-50.22
FLANGE

DEFINITIVO FINAL ISSUE

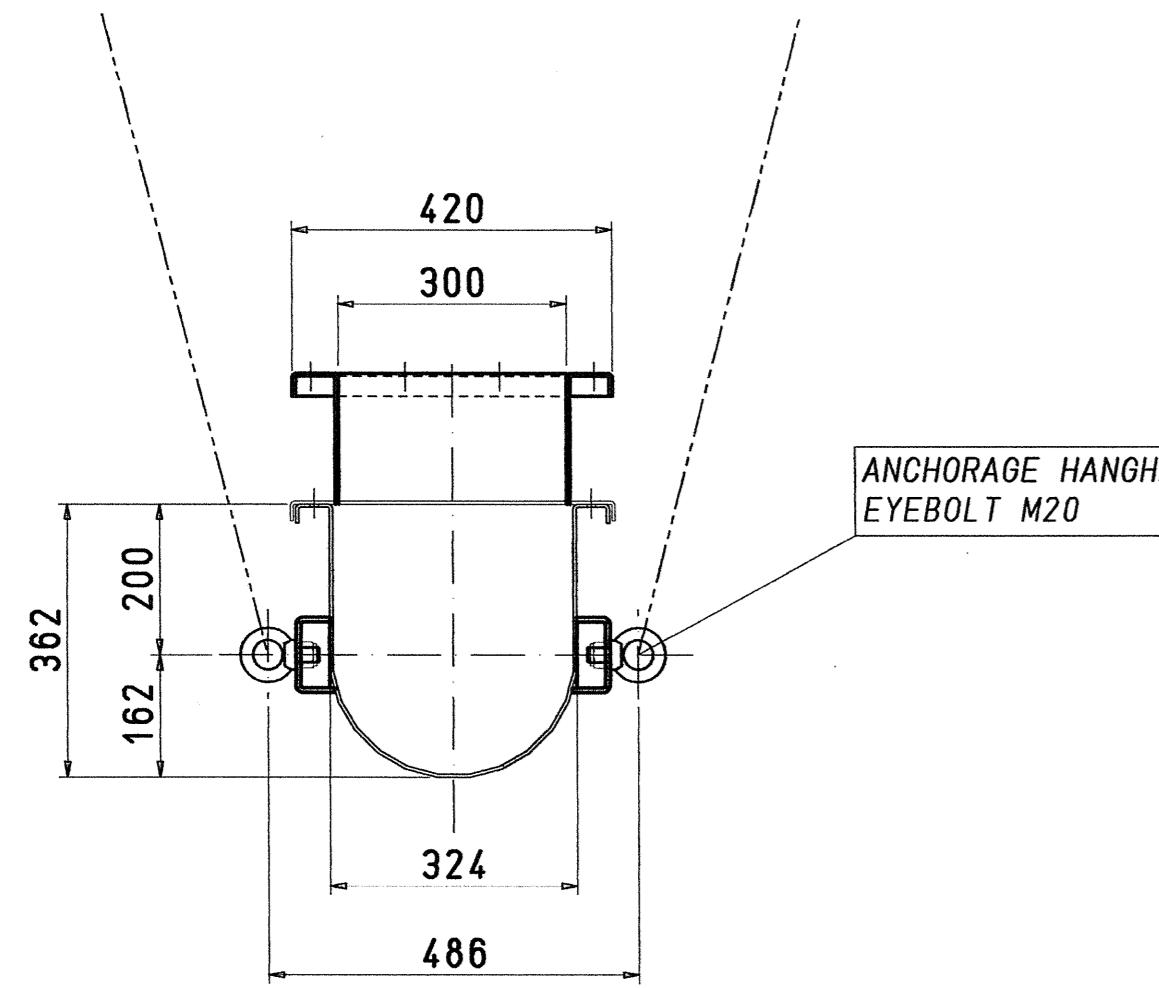
600	1			62CL4
PESO KG. WEIGHT KG.	NPEZZI N.PIECES	MATERIALE / MATERIAL	CODICE / CODE	ITEM
NOTE comm: 12198	COMM.N JOB.N	2F11	BARBIERI MODENA	DATA DATE 17-04-12
	SCALA SCALE	1:10	COSTRUZIONI MECCANICHE ITALY	DISEGN. DRAWN MW/CP
TITOLO	COCLEA A CANALE CON ELICA Ø 300 L=2200 mm			
TITLE	SCREW CONVEYOR Ø 300 L=2200 mm			
SOST.IL N.	097-012-130	DISEGNO N. DRAWING N.	041-803-000	
SOST.DAL N.				
I disegni sono di proprietà della ditta BARBIERI che ne vieta la riproduzione e divulgazione				



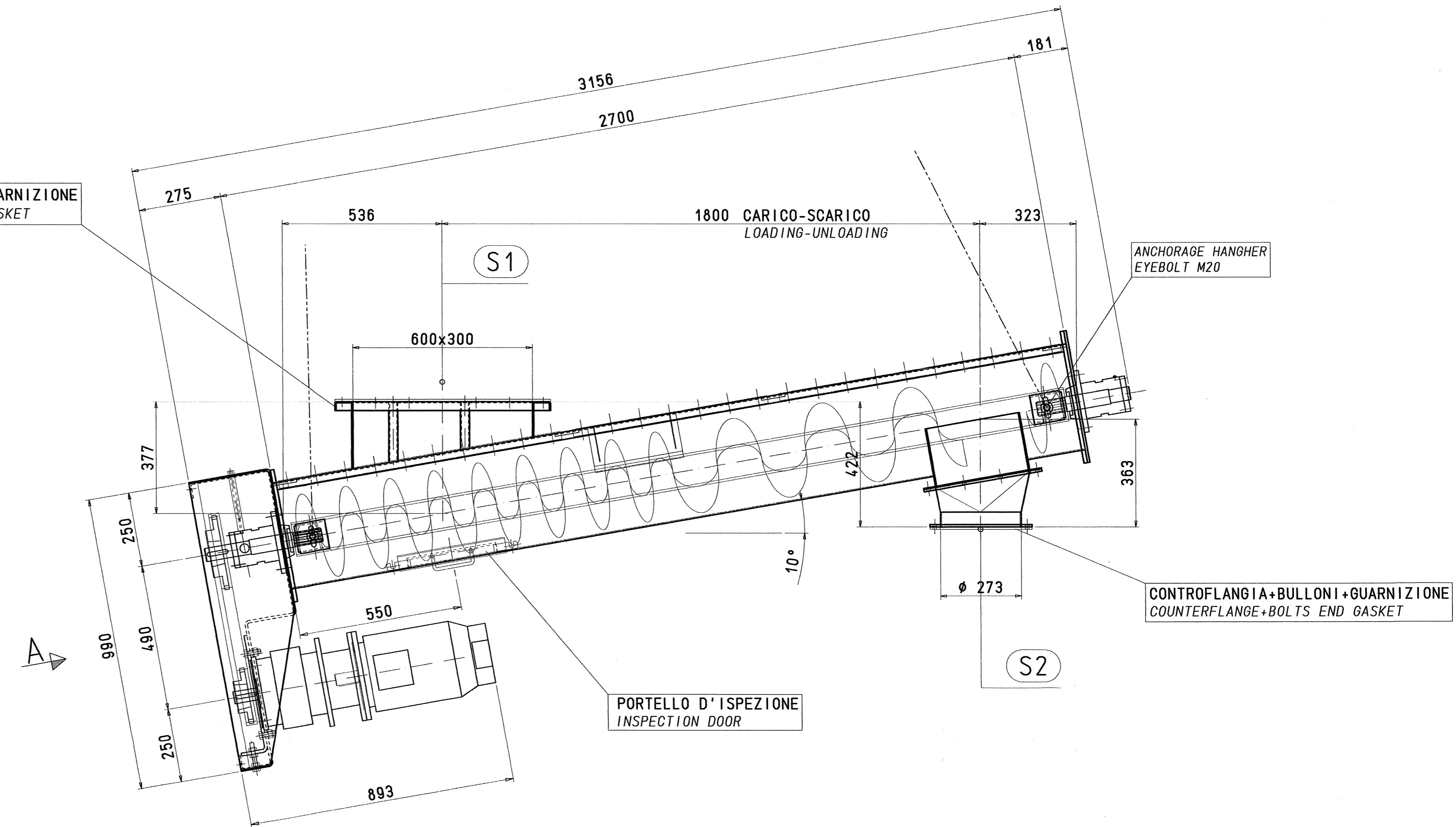
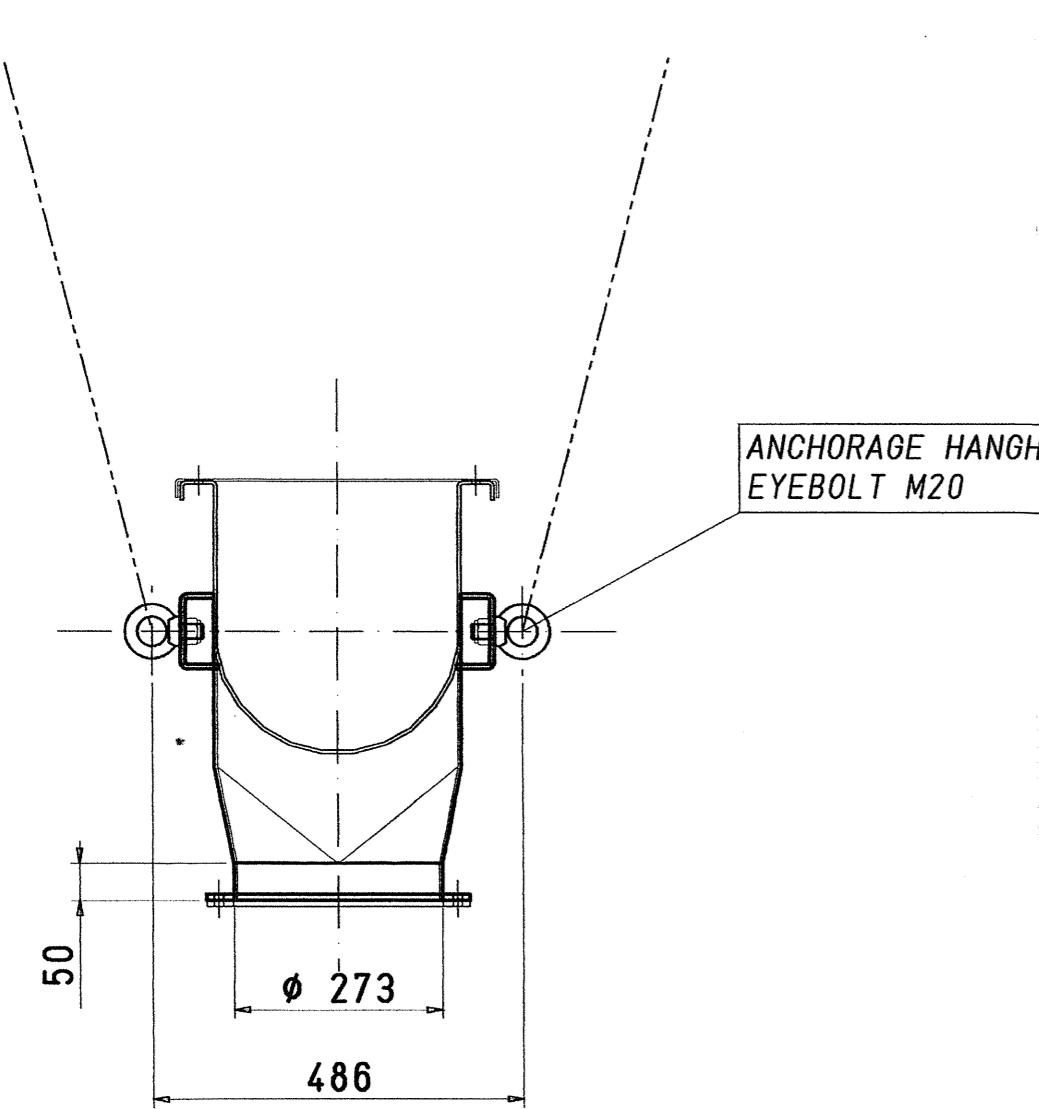
VISTA DA
VIEW FROM A

880		1	*	62CL6
PESO KG. WEIGHT KG.	N.PZI N.PECES	MATERIALE / MATERIAL	CODICE / CODE	ITEM
COMM. JOBN.	2F11			
SCALA SCALE	1:10			
NOTE: Comm: 12199				
TITOLO TITLE		COCLEA A CANALE CON ELICA ø 300 L=6000 mm SCREW CONVEYOR ø 300 L=6000 mm		
SOST.ILN. SOST.DAL N.	097-012-131	DISEGNO N. DRAWING N.		
				041-804-000
I disegni sono di proprietà della ditta BARBIERI che ne riserva la riproduzione e divulgazione				

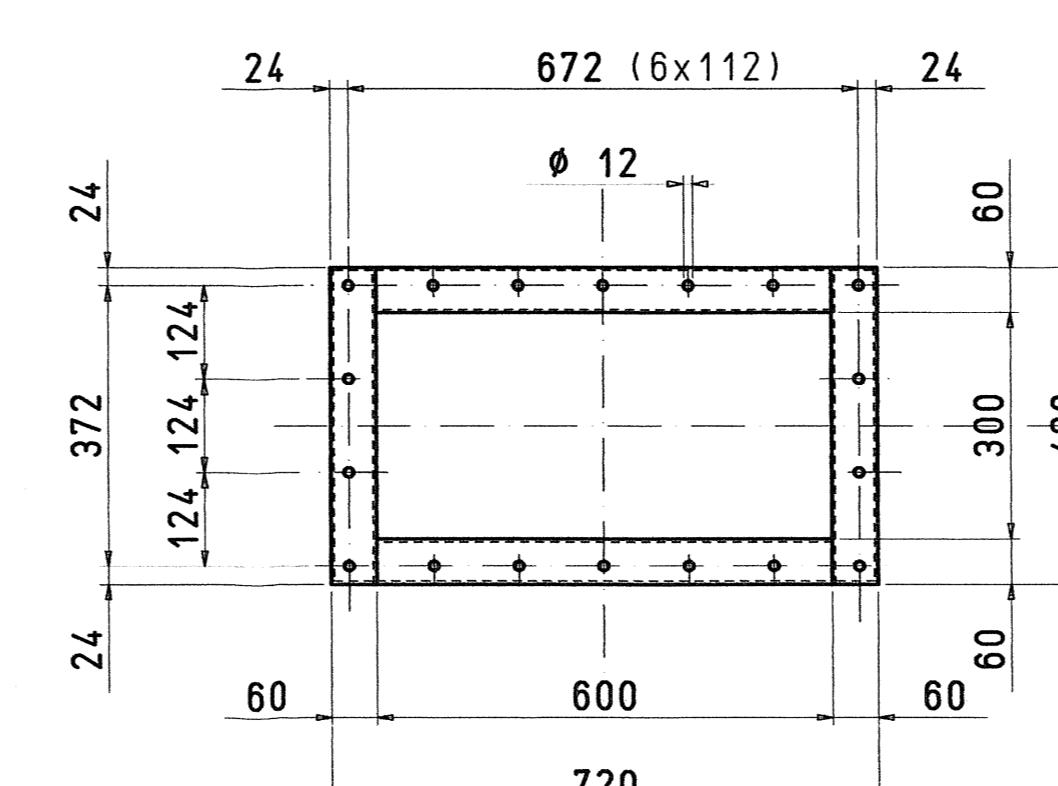
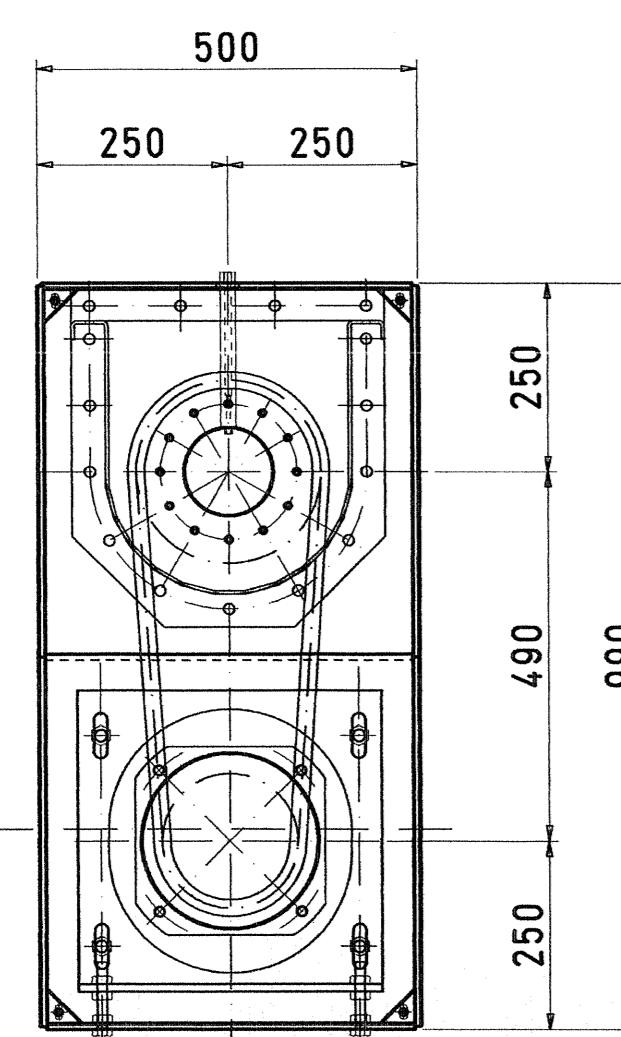
DEFINITIVO
FINAL ISSUE



CONTROFLANGIA+BULLONI+GUARNIZIONE
COUNTERFLANGE+BOLTS END GASKET



VISTA DA A
VIEW FROM A



FLANGIA DN250 TA-50.22
FLANGE

630	1	MATERIALE/MATERIAL	CODICE/CODE	62CL3
PESO KG WEIGHT KG.	N°PIEZzi N°PIECES			
JOB N°	2F11			DATA 17-04-12
SCALA SCALE	1:10			DISEGN. DRAWN. MW/CP
NOTE Comm.: 12197				
TITOLO	COCLEA A CANALE CON ELICA Ø 300 L=2700 mm			
TITLE	SCREW CONVEYOR Ø 300 L=2700 mm			
SOST. IL N°	097-012-129	DISEGNO N°	041-802-000	
SOST. DAL N°				
I disegni sono di proprietà della ditta BARBIERI che ne vieta la riproduzione e divulgazione				

DEFINITIVO
FINAL ISSUE

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N.º 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE BELT CONVEYOR NPF800/15,4 (Item 64N1)

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12193

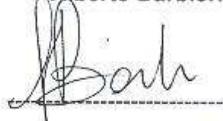
Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/EC)

HARMONIZED STANDARDS:

EN 12100-1	(SAFETY OF MACHINERY)
EN 12100-2	(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE BELT CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

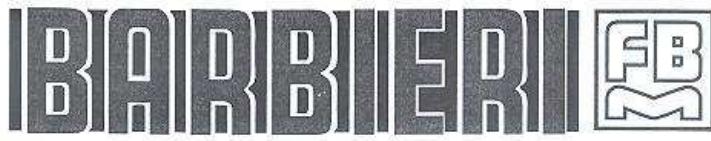


Modena, 20 December 2012

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
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REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N.° 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE BELT CONVEYOR NPF300/10,35 (Item 65N1)

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12194

Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/EC)

HARMONIZED STANDARDS:

EN 12100-1	(SAFETY OF MACHINERY)
EN 12100-2	(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE BELT CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

Modena, 20 December 2012



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
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e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e
Partita I.V.A. N.º 00178890364



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE SCREW CONVEYOR ITEM 62CL1

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12195

Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/CE)

HARMONIZED STANDARDS:

EN 12100-1
EN 12100-2

(SAFETY OF MACHINERY)
(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE SCREW CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

Modena, 20 December 2012



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
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e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N.º 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE SCREW CONVEYOR ITEM 62CL2

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12196

Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/CE)

HARMONIZED STANDARDS:

EN 12100-1
EN 12100-2

(SAFETY OF MACHINERY)
(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE SCREW CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

Modena, 20 December 2012



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
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e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 26995/09

Codice Fiscale e N.° 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE SCREW CONVEYOR ITEM 62CL3

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12197

Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/CE)

HARMONIZED STANDARDS:

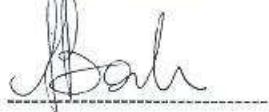
EN 12100-1
EN 12100-2

(SAFETY OF MACHINERY)
(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE SCREW CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

Modena, 20 December 2012



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO:
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28896/09

Codice Fiscale e N.° 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE SCREW CONVEYOR ITEM 62CL4

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12198

Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/CE)

HARMONIZED STANDARDS:

EN 12100-1
EN 12100-2

(SAFETY OF MACHINERY)
(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE SCREW CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

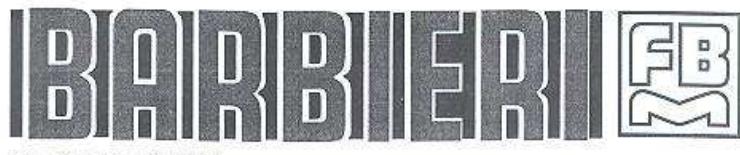
Modena, 20 December 2012



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
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TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N. 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION OF CONFORMITY

The undersigned **BARBIERI COSTRUZIONI MECCANICHE S.R.L.**
Via Morane, 264 - 41125 MODENA (ITALY) TEL. 059/300018 - FAX 059/300095

Herewith declares that:

THE SCREW CONVEYOR ITEM 62CL6

Job : 2F11

MANUFACTURING YEAR: 2012

SERIES No: 12199

Is in conformity with the provisions of the MACHINERY DIRECTIVE (Directive 2006/42/CE)

HARMONIZED STANDARDS:

EN 12100-1
EN 12100-2

(SAFETY OF MACHINERY)
(SAFETY OF MACHINERY)

IT IS NOT ALLOWED TO PUT THE SCREW CONVEYOR INTO SERVICE UNTIL THE MACHINERY INTO WHICH IT IS TO BE INCORPORATED HAS BEEN FOUND AND DECLARED TO BE IN CONFORMITY WITH THE PROVISIONS OF DIRECTIVE.

Legal representative
Alberto Barbieri

Modena, 20 December 2012





**QUALITY SYSTEM
PROCEDURE**

IOQ-010

Rev. 04

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Section 14 Screw Conveyors

ITEM 62CL1 – 62CL2 – 62CL3 – 62CL4 – 62CL6

(Job 2F11) – Ord. 121235

S	Description	Reference Documents	Inspection				Notes
			Manufacturer Test	Report	Ballestra Attend	Third Party Report	
1	Construction Drawing Approval	Equipment specification Data sheet	20/07		H	MAC	
2	Review of mill certificates	Design Code Ballestra Material Requisition	30/07		R		
3	Visual and dimensional check of preassembled machine	Erection drawings Data sheet	03/09	Yes	H	COL	
4	Fabricate parts identification marks (if any)	Erection drawings		Yes	H	COL	Not applicable
5	Functional test / Running test	Manufacturer procedure	19/12	Yes	H	COL	
6	Current Absorption check	Motor nameplate/Data Sheet	19/12	Yes	W	COL	
7	Surfaces treatment/ Painting check	Manufacturer specification Ballestra Material Requisition	19/12	Yes	W	COL	
8	Nameplate Check	Ballestra Material Requisition	19/12		H	COL	"CE" marking if required
9	Accessories and Spare Parts check	Ballestra Material Requisition	19/12	Yes	SW	COL	
10	Documents review	Applicable code Ballestra Material Requisition	20/12	Yes	R	MAC	



**QUALITY SYSTEM
PROCEDURE**

IOQ-010

Rev. 04

Page 1 of 1

Section 14 Belt Conveyor

ITEM 64N1

(Job 2F11) – ord. 121235

S	Description	Reference Documents	Inspection				Notes
			Manufacturer Test	Report	Ballestra Attend	Dept	
1	Construction Drawing Approval	Equipment specification Data sheet	04/06		H	MAC	
2	Review of mill certificates	Design Code Ballestra Material Requisition	20/06		R		
3	Visual and dimensional check of preassembled machine	Erection drawings Data sheet	10/09	Yes	H	COL	
4	Fabricate parts identification marks (if any)	Erection drawings		Yes	H	COL	Not applicable
5	Functional test / Running test	Manufacturer procedure	17/12	Yes	H	COL	
6	Current Absorption check	Motor nameplate/Data Sheet	17/12	Yes	W	COL	
7	Surfaces treatment/ Painting check	Manufacturer specification	17/12	Yes	W	COL	
8	Nameplate Check	Ballestra Material Requisition	17/12		H	COL	"CE" marking if required
9	Accessories and Spare Parts check	Ballestra Material Requisition	17/12	Yes	SW	COL	
10	Applicable code Documents review	Ballestra Material Requisition	17/12	Yes	R	MAC	



Desmet Ballestra s.p.a.
www.desmetballestra.com

QUALITY SYSTEM PROCEDURE

IQQ-010

Rev. 04

Page 1 of 1

Section 14 Belt Conveyor

ITEM 65N1

(Job 2F11) – ord. 121235

Step	Description	Reference Documents	Inspection				Notes
			Manufacturer Test	Attend	Ballestra Dept	Third Party Attend	
1	Construction Drawing Approval	Equipment specification Data sheet	23/07	H	MAC		
2	Review of mill certificates	Design Code Ballestra Material Requisition	30/07	R			
3	Visual and dimensional check of preassembled machine	Erection drawings Data sheet	05/09	Yes	H	COL	
4	Fabricate parts identification marks (if any)	Erection drawings		Yes	H	COL	Not applicable
5	Functional test / Running test	Manufacturer procedure	29/11	Yes	H	COL	
6	Current Absorption check	Motor nameplate/Data Sheet	29/11	Yes	W	COL	
7	Surfaces treatment/ Painting check	Manufacturer specification Ballestra Material Requisition	29/11	Yes	W	COL	
8	Nameplate Check	Ballestra Material Requisition	29/11	H	COL		"CE" marking if required
9	Accessories and Spare Parts check	Ballestra Material Requisition Applicable code	29/11	Yes	SW	COL	
10	Documents review	Ballestra Material Requisition	05/12	Yes	R	MAC	

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO:
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N.º 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

DECLARATION

To Whom It May Concern

The undersigned Barbieri Alberto in his capacity as legal representative at Barbieri Costruzioni Meccaniche srl a company having its registered office at Modena – Via Morane 264, hereby declares that the goods described on your order:

- n° 121235 dated 28-05-2012

are not included on the list of dual use items and technologies referred to in the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 (setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items); are not, directly or indirectly, in full or in part, military nor originally designed as component of any weapon, instrument or supply for military use.

Barbieri Alberto
(Legal Representative)

Modena, 21 December 2012

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
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e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N.° 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

21 December 2012

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Ref: Your order n° 121235 dated 28-05-2012 – Job 2F11

CERTIFICATION

Screw conveyor Item 62CL1 (Code 12195)
Screw conveyor Item 62CL2 (Code 12196)
Screw conveyor Item 62CL3 (Code 12197)
Screw conveyor Item 62CL4 (Code 12198)
Screw conveyor Item 62CL6 (Code 12199)

HS CODE N° 842839


BARBIERI COSTRUZIONI
MECCANICHE
S.R.L.
MODENA

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e' N. 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

21 December 2012

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Ref: Your order n° 121235 dated 28-05-2012 – Job 2F11

CERTIFICATION

Belt conveyor Item 64N1 (Code 12193)
Belt conveyor Item 65N1 (Code 12194)

HS CODE N° 842833

[Handwritten signature]
BARBIERI COSTRUZIONI
S.R.L.
MODENA

LA COMMERCIALE ACCIAI

ACCIAI SPECIALI - LAMINATI - TRAFILATI - RETTIFICATI - BARRA CROMATA
CAPITALE SOCIALE € 140.400 INT. VERS. - C.C.I. A.A. MODENA 183502
REGISTRO IMPRESE 10550 - CODICE FISCALE E PARTITA IVA 00760690362

Sede di Modena:
VIA L.NOBILI 340/A - 41128 MODENA
TEL. 059 333557 FAX. 059 332647

Magazzino di Sassuolo:
VIA RADICIN PIANO 391 - 41049 SASSUOLO
TEL. 0536 804092 - 0536 804051
FAX. 0536 803997



6/4/11
SPESSIBILE
BARBIERI COSTRUZIONI MECCANICHE S.R.L.

VIA MORANE N. 264
41125 MODENA

MO

ATTESTATO DI COLLAUDO
RIF. NORME UNI EN 10204 2.2

PAGINA 1

DATA DOCUMENTO
05/09/2011

NUMERO DOCUMENTO
7442/0

Documento di trasporto:

commerciale@lacommercialeacciai.it

www.lacommercialeacciai.it

CODICE / ARTICOLO	QUANTITA'	UNITA' DI MISURA	RIF. FORNITORE		CONSEGNA		CERTIFICATO FOR.	
			Cod	Colata	Bolla	Data	Ns/Nr	Data
4000050 RETT C.40 TONDO 50	94	KG	000250	48036				
4000055 RETT C.40 TONDO 55	114	KG	002050	10015				
4000060 RETT C.40 TONDO 60	140	KG	002050	56022				
3000006 S235JR TRAF TONDO 6	12	KG	001500					
2000140 LAM C.40 TONDO 140	242	KG	002050					

Analisi chimica % - Chemical Analysis

C	Pb	Mn	S	P	Si	Cu	Ni	Cr	Sn	Mo	Al	As	N	Vn	Wf	Ti
4000050 0.420	0.620	0.025	0.010	0.180	0.160	0.080	0.080	0.009	0.024	0.022						
4000055 0.405	0.760	0.022	0.018	0.300	0.210	0.050	0.170	0.009	0.010	0.010			0.002		0.010	
4000060 0.395	0.730	0.021	0.012	0.250	0.140	0.040	0.100	0.005	0.010	0.007			0.003		0.010	
3000006 0.053	0.590	0.027	0.015	0.130	0.330	0.100	0.120		0.020	0.003			0.005			
2000140 0.420	0.740	0.012	0.014	0.230	0.140	0.050	0.080	0.005	0.010	0.007			0.001		0.009	

Caratteristiche meccaniche - Mechanical Properties

GRAND	Snevare. Re - N/mm	Resist. Rm - N/mm	Allungam. A %	Z %	Resilienza HBS	HCU	xC	Kv1	Kv2	Kv3	KVM
4000050 399.000	655.000	24.400									
4000055 400.000	656.000	24.200									
4000060 387.000	631.000	25.700									
3000006 278.000	436.000	34.500									
2000140 393.000	645.000	24.900	48.900		33.300						

FINE STAMPA

Modello CE COLA AC

LA COMMERCIALE ACCIAI

S.p.A.

commerciale@lacommercialeacciai.it
www.lacommercialeacciai.it

ACCIAI SPECIALI - LAMINATI
TRAFILATI - RETTIFICATI - BARRE CROMATA
VIA L. NOBILI, 34/A - 41100 MODENA
TEL. (059) 393557 - 333103
TELEFAX (059) 32647

CAPITALE SOCIALE € 140.400 INT. VERS. - C.C.F.A.A. MODENA 183502
REGISTRO IMPRESE 10550 - CODICE FISCALE E PARTITA IVA 00780890362

MAGAZZINO DI SASSUOLO
VIA RADICI IN PIANO, 391
TEL. (0536) 804092 - 804051
TELEFAX (0536) 803997

SPETTABILE
BARBIERI COSTRUZIONI MECCANICHE S.R.L.

VIA MORANE N. 264
41125 MODENA

MO

ATTESTATO DI COLLAUDO
RIF. NORME UNI EN 10204 2.2

PAGINA 1

DATA DOCUMENTO 08/07/2010 NUMERO DOCUMENTO 4777/0

Documento di trasporto:

CODICE / ARTICOLO	UNITA' DI MISURA	QUANTITA'	RIF. FORNITORE		CONSEGNA		CERTIFICATO FOR.	
			Cod	Colata	Bolla	Data	Ns/Nr	Data
4000025 RETT C.40 TONDO 25	KG	166	002050					
3210040 TRAF FE42 PIATTO 100 X 40	KG	196	002050					

Analisi chimica % - Chemical Analysis

C	Pb	Mn	S	P	Si	Cu	Ni	Cr	Sn	Mo	Al	As	N	Vn	Wf	Ti
4000025																
0.435	0.680	0.017	0.012	0.240	0.160	0.080	0.100	0.006	0.020	0.005			0.002		0.010	

Caratteristiche meccaniche - Mechanical Properties

GRANO	Snervam. Re -N/mm	Resist. Rm -N/mm	Allungam. A %	Z %	Resilienza HBS	HCU		xC		Kv1		Kv2		Kv3		KVM	
4000025																	
	397.000	652.000	24.500	48.800				33.300									

3210040

282.000 445.000 38.100

FINE STAMPA



MARCEGAGLIA

Sezione Legale e Amministrativa:
via Bresciani 10
46240 Gazzolo degli Appennini
Mantova-Italy
Tel. +39 - 0376 655
Fax +39 - 0376 645 600
www.giappomarcofaccia.com

PETTABILE MARCEGAGLIA SPA OSTERIA GRANDE
via Frulli 9/11 - 46040 Pettabile (MN) - tel. 0523/620000 - fax 0523/620001

UBO NERO TONDO										10000 Volumen litri	
										Pm-	A5
				C	Mn	S	Af	(%)	(Nm/m ²)	(%)	
				(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Q.s.	Colza	0.67165	1.180	1.484	0.06	0.016	0.042	0.47	538	402	31.5
1° D.A.014		0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0
2°C/N0010169	2576 KG	0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0
2°C/N0010170	2571 KG	0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0
2°C/N0010171	2057 KG	0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0
2°C/N0010172	2576 KG	0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0
2°C/N0010173	2555 KG	0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0
2°C/N0010174	2309 KG	0.67577	1.190	1.490	0.10	0.020	0.053	0.35	546	419	30.0

88860076 TNT015 114.3Dx 8.00x12000 S355/2G3 E7A 0009/TM97 181180419720 SCORTA EIA Data 02/03/2011

<p>Per leggere e stampare i testi: Brescia 11 34040 Gazzada degli甄皮尼 Italy +39 - 0376 685 +39 - 0376 685 600 www.parmenegalli.com</p>	<p>Tipo: 3.1 CERTIFICATO DI CLAUDIO EN 10204 Numero: 10312020603 Creazione: 19/01/2012</p>	<p>N° Consegna: B0032006R2 Da: 19/01/2012</p>	<p>Contratto Quattria RESP. M.Grove</p>	<p>Page: 2/5</p>
<p>Destinatario Merit SPETTACOLE MARCEGAGLIA SPA OSTERIA GRANDE Via Fruli 9/11 34040 Oderzo, Goriziano, IT</p>				

09/09/TM97 18/1804/19720 SCORTA EIA Data 02/03/2011

CLIENTE	BORGES, S.R.
ORDINE N.	244+255
N. TUBI	✓ MT
DAT	10/10/1953 6/A/12
KG.	266

The figure is a scatter plot with a grid background. The horizontal axis is labeled 'n' and has major tick marks at 0, 2, 4, 6, 8, and 10. The vertical axis is labeled 'm' and has major tick marks at 0, 2, 4, 6, 8, and 10. Two data series are plotted: one series consists of open circles connected by a dashed line, and the other series consists of solid squares connected by a solid line. Both series start at the origin (0,0) and end at the point (10,10), representing a direct proportionality between n and m.

Page 6554 Rev. 9 Date 29-06-05



TEST REPORT UNI EN 10204-2.2 - DIN 50049/2.2-ISO 404

CANESSA S.p.A.
Strada Emilia Est 130 C/D - 43012 Fontanellato (PR)
Tel. -39 0521 827811 Fax -39 0521 827829
COD. Fisc. e Reg. Imp. Genova 03688240104
Partita IVA 0218100017

**PROVA DI TRAZIONE
TENSILE TEST**

IDENTIFICAZIONE DEL PRODOTTO IDENTIFICATION

PROVA DI TRAZIONE
TENSILE TEST

ANALISI CHIMICA DEL PRODOTTO
CHEMICAL ANALYSIS

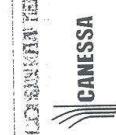
CHEMICAL ANALYSIS										I RISULTATI PROVENGONO DA PROVE EFFETTUATE SULLA BASE DI CONTROLLI NON SPECIFICI THE TEST RESULTS ARE OBTAINED FROM NON-SPECIFIC INSPECTION				
N. Colata Heat Number	C	Mn	P	S	Si	Al	Ni	Cr	Mo	V	Cu	Ti	B	Nb
117360	0.05000	0.27700	0.01200	0.00400	0.03800		0.04000			0.05800				

Certifichiamo che i prodotti sopra elencati sono conformi ai requisiti dell'ordine
We hereby certify, that the above mentioned materials have been delivered in a

Riferimento Bolla(DDT) - Invoice:
Certifichiamo che i prodotti sopra elencati sono conformi ai requisiti dell'ordine
We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order

<p>MODO DI LABORAZIONE DELL'ACQUA: CONVERSAZIONE CON OSSIGENO PURO, COLATA CONVERSORI: Semimolto Process, Converter with pure Oxygen Continuus casting</p> <p>-STATO DI FORNITURA: Laminazione a temperatura controllata -Delivery Conditions: Controlled Rolling Temperature</p>	<p>PROVA DI PIEGA: soddisfacente - Bending Test: OK</p> <p>CONTROLLI VISO E DIMENSIONALE: Soddisfacente Surface and Dimensions Control: OK</p>	<p>Riferimento Consegna- Delivery: 80203265 / 000020</p>
<p>Data: 21.12.2010</p>	<p>C. Mora Collaudatore - Tester</p>	

ESTRUTURA DA INDÚSTRIA



TEST REPORT UNI EN 10204-2.2 - DIN 50049/2.2-ISO 404

Pag. 1/1

CANESSA S.p.A.
Strada Emilia Est, 130 C/C 43012 Fontanellato (PR)
Tel +39 0521 827811 Fax +39 0521 827829
COD. FISCALE e Reg. Imp. Genova 03688240104
Partita IVA 08228100017

IDENTIFICAZIONE DEL PRODOTTO
PRODUCT IDENTIFICATIONPROVA DI TRAZIONE
TENSILE TEST

Organismo di controllo Checking Entity IF01	Cliente - Customer BARBIERI S.R.L.	Ordine F01 Order OF374	Qualità - Steel Grade EN 10111 DD/T dilato -
Produttore Steelmaker X	Dest/M: BARBIERI S.R.L.	Customer Order OF374	Disegno N. - Customer Product Code: MLF00000000011 Spessore Thickness 3.00 Larghezza Width 1.500,00 Lunghezza Length 3.000,00 Ht Base 0,00

PROVA DI TRAZIONE TENSILE TEST				Durezza Hardness				RESILIANZA IMPACT TEST							
N° Partita SAP ID.	Matricola Prodotto Coil Number	Peso Partita Weight (Kg)	Orientamento Test Direction	Provetta Test Sample	ReYS MPa	RmUTS MPa	Re/ Rm	A% El%	r	n	HRB	1 Head 2 Foot 3 Centre	Posiz. Posiz.	Valori singoli - Single Values	
00016688193	7411024	730026013	1.627,000	X	230	350	0,657	34,00							
00016688201	7411024	730026013	1.662,000	X	230	350	0,657	34,00							
00016688222	7411024	730026013	1.726,000	X	230	350	0,657	34,00							

ANALISI CHIMICA DEL PRODOTTO
CHEMICAL ANALYSIS

N. Colata Heat Number	C	Mn	P	S	Si	Al	Ni	Cr	Mo	V	Cu	Ti	B	Nb	
730026013	0,05350	0,28500	0,01250	0,00860	0,01980	0,04070	0,02150	0,02420	0,00150		0,02910		0,00010		Riferimento Bolta(DDT) - invoice: 2009604

I RISULTATI PROVENGONO DA PROVE EFFETTUATE SULLA BASE DI CONTROLLI NON SPECIFICI
THE TEST RESULTS ARE OBTAINED FROM NON-SPECIFIC INSPECTION

Certichiamo che i prodotti sopra elencati sono conformi ai requisiti dell'ordine
We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order

-MODO DI ELABORAZIONE DELL'ACIAIO:
CONTINUA - Steelmaking Process: Converter with pure Oxygen
-Soddisfacente - Bending Test: OK
CONTROLLI VISIVI E DIMENSIONALE: Soddisfacente
Surface and Dimensions Control: OK
-STATO DI FORNITURA: Laminazione a temperatura controllata
-Delivery Condition: Controlled Rolling Temperature

Riferimento Bolta(DDT) - invoice:
2009604
Riferimento Consegna-Delivery:
802020316 / 000010
Collaudatore - Tester: **C.Mora**

Data: 16.12.2010

LA COMMERCIALE ACCIAI S.p.A.

ACCIAI SPECIALI - LAMINATI - TRAFILATI - RETTIFICATI - BARRA CROMATA
CAPITALE SOCIALE € 140.400 INT. VERS. - C.C.I. A.A. MODENA 183502

REGISTRO IMPRESE 10560 - CODICE FISCALE E PARTITA IVA 00760890362

Sede di Modena:
VIA L. NOBILI 340/A - 41100 MODENA
TEL. 059 333557 FAX. 059 332647

Magazzino di Sassuolo:
VIA RADICI IN PIANO 381 - 41049 SASSUOLO
TEL. 0536 804092 - 0536 804051
FAX. 0536 803997

Depositto di Parma:
VIA LONDRA N. 11 - ZONA INTERPORTO
43010 BIANCONESE DI FONTEVIVO
TEL. 0521 617238 - FAX. 0521 617237



SPETTACOLARE

BARBieri COSTRUZIONI MECCANICHE S.R.L.

VIA MORANE N. 264

41100 MODENA

MO

ATTESTATO DI COLLAUDO
RIF. NORME UNI EN 10204 2.2

PAGINA 1

DATA DOCUMENTO 22/01/2008 NUMERO DOCUMENTO 454/0

Documento di trasporto:

commerciale@lacommercialacciai.it

www.lacommercialacciai.it

CODICE / ARTICOLO	UNITÀ DI MISURA	QUANTITÀ	RIF. FORNITORE		CONSEGNA		CERTIFICATO FOR.	
			Cod	Colata	Bolla	Data	Ns/Nr	Data
4000030 RETT C.40 TONDO 30	KG	138	002050					
4000040 RETT C.40 TONDO 40	KG	186	000260					
4000050 RETT C.40 TONDO 50	KG	476	002050					
4000065 RETT C.40 TONDO 65	KG	160	002050					
4000070 RETT C.40 TONDO 70	KG	186	000260					
4000080 RETT C.40 TONDO 80	KG	246	002050					

Analisi chimica % - Chemical Analysis

C	Pb	Mn	S	P	Si	Cu	Ni	Cr	Sn	Mo	Al	As	N	Vn	WF	Ti
4000030 0.410	0.670		0.021	0.012	0.220	0.190	0.070	0.080	0.008	0.020	0.005		0.001		0.010	
4000040 0.430	0.650		0.013	0.010	0.260											
4000050 0.400	0.730		0.021	0.016	0.230	0.190	0.050	0.170	0.008	0.010	0.005				0.010	
4000065 0.405	0.760		0.022	0.018	0.300	0.210	0.050	0.170	0.009	0.010	0.010		0.002		0.010	
4000070 0.420	0.620		0.025	0.010	0.180	0.160	0.080	0.080	0.009	0.024	0.022					
4000080 0.405	0.760		0.022	0.018	0.300	0.210	0.050	0.170	0.009	0.010	0.010		0.002		0.010	

Caratteristiche meccaniche - Mechanical Properties

GRANO	Snervam. Re -N/mm	Resist. Rm -N/mm	Allungam. A %	Z %	Resilienza HBS	HCU	xC	Kv1	Kv2	Kv3	KVM
4000030 386.000		633.000	25.600	49.400		45.100					
4000040 687.000		808.000	19.700								
4000050 386.000		634.000	25.800								

FINE STAMPA

Modello CE_COLA_AC

LA COMMERCIALE ACCIAI s.p.a.

ACCIAI SPECIALI - LAMINATI - TRAFILATI - RETTIFICATI - BARRA CROMATA
CAPITALE SOCIALE € 140.400 INT. VERS. - C.C.I. A.A. MODENA 183502
REGISTRO IMPRESE 10550 - CODICE FISCALE E PARTITA IVA 00780690362

Sede di Modena:
VIA L.NOBILI 340/A - 41100 MODENA
TEL. 059 333557 FAX. 059 332647

Magazzino di Sassuolo:
VIA RADICI IN PIANO 391 - 41049 SASSUOLO
TEL. 0536 804092 - 0536 804051
FAX. 0536 803997



SPETTABILE

BARBIERI COSTRUZIONI MECCANICHE S.R.L.

VIA MORANE N. 264

41100 MODENA

MO

ATTESTATO DI COLLAUDO
RIF. NORME UNI EN 10204 2.2

PAGINA 1

DATA DOCUMENTO

NUMERO DOCUMENTO

22/01/2008

454/0

Documento di trasporto:

commercial@lacommercialeacciai.it

www.lacommercialeacciai.it

CODICE / ARTICOLO	UNITA' DI MISURA	QUANTITA'	RIF. FORNITORE		CONSEGNA		CERTIFICATO FOR.	
			Cod	Colata	Bolla	Data	Ns/Nr	Data
4000030 RETT C.40 TONDO 30	KG	138	002050					
4000040 RETT C.40 TONDO 40	KG	186	000260					
4000050 RETT C.40 TONDO 50	KG	476	002050					
4000065 RETT C.40 TONDO 65	KG	160	002050					
4000070 RETT C.40 TONDO 70	KG	186	000260					
4000080 RETT C.40 TONDO 80	KG	246	002050					

Analisi chimica % - Chemical Analysis

C	Pb	Mn	S	P	Si	Cu	Ni	Cr	Sn	Mo	Al	As	N	Vn	Wf	Ti
4000030			0.021	0.012	0.220	0.190	0.070	0.080	0.008	0.020	0.005			0.001		0.010
0.410	0.670															
4000040			0.013	0.010	0.260											
0.430	0.650															
4000050			0.021	0.016	0.230	0.190	0.050	0.170	0.008	0.010	0.005					0.010
0.400	0.730															
4000065			0.022	0.018	0.300	0.210	0.050	0.170	0.009	0.010	0.010			0.002		0.010
0.405	0.760															
4000070			0.025	0.010	0.180	0.160	0.080	0.080	0.009	0.024	0.022					
0.420	0.620															
4000080			0.022	0.018	0.300	0.210	0.050	0.170	0.009	0.010	0.010			0.002		0.010
0.405	0.760															

Caratteristiche meccaniche - Mechanical Properties

GRANO	Snervam. Re - N/mm	Resist. Rm - N/mm	Allungam. A %	Z %	Resilienza HBS	:						
						HCU	xC	Kv1	Kv2	Kv3	KVM	
4000030												
	386.000	633.000	25.600	49.400		45.100						
4000040												
	687.000	808.000	19.700									
4000050												
	386.000	634.000	25.600									

FINE STAMPA

MARCEGAGLIA

Sede Legale e amministrativa
della Garanzia degli spacci
Maronati Italy
Tel. +39 - 0376 685 865
Fax +39 - 0376 685 800
www.gruppo.marcegaglia.com

Clelia
SPETTIBILE MARCEGAGLIA SPA LAINATE
Via Canova 36
20020 Lainate IT

Destinatario Merci

SPETTIBILE MARCEGAGLIA SPA LAINATE
Via Canova 36
20020 Lainate IT

Tipo: 3 CERTIFICATO D. COLLAUO EN 10204
Numero: 1031219561
Creato il: 12/03/2012

N° Consegna: 8203204135 Controllato Qualità:
Del: 12/03/2012 RESP. M.Gori
N° doc. di trasp.: 202300952 Sub. Casalinghiere

Pagine: 2/3

58800819 TNT041 168.30x 4.00(E)x12000 P235TR1 EN10217-1 1811925344/30 SCORTA M-ETA Data 0.00.00

TUBO NERO TONDO

N° Partita	Q.tà	Colata	C.	Mn	Si	P	S	Al	Cr	Ni	Si	EC 1	Rm	Roh	A5	(N/mm²) (N/mm²)
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
12C2001959	2393 KG	124620	.059	.377	.006	.0199	.040	.020	.0009	.017	.021	.05	395	330	32.5	
12C2001960	2433 KG	124620	.059	.377	.006	.0199	.040	.020	.0009	.017	.021	.05	395	330	32.5	
12C2001961	2392 KG	124620	.059	.377	.006	.0199	.040	.020	.0009	.017	.021	.05	395	330	32.5	
12C2001962	1667 KG	124620	.059	.377	.006	.0199	.040	.020	.0009	.017	.021	.05	395	330	32.5	

Il presente certificato è stato redatto per conto della società
CLIENTE...BASSANI S.p.A.
CRDIRE N. 2M+2355 DT. 27/6/12
N. TUBI.....
SOT 101000153 6/7/12

Note:
Certichiamo che i prodotti sopre elencati sono conformi alle prescrizioni dell'ordine
Controllo italiano e dimensionale OK
N. del fascio: 10254 Direzione del maggio di prove: lunghezza
Non trattato termicamente Temperatura di prova: 22°C±4
Marcato: MM EN 10217-1 P235TR1 C2 M.G.C.L.
EC 1 è Cr+Cu+Mo+Ni

Prova di schiacciamento sec. ISO 8492 (EN 10233) OK
Prova di allungamento sec. ISO 8493 (EN 10234) OK
Controllo non distillazione sec. EN 10246-1/3 OK

Mod. DSIN Rev. 3 Data 19-06-09

MARCEGAGLIA

Sede legale e amministrativa:
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46040 Gazzoldo degli Ippoliti
Mantova-Italy
Tel. +39 - 0376 685 685
Fax. +39 - 0376 685 600
www.gruppanancaglia.com

Codice
SPETTACOLARE MARCEGAGLIA SPA OSTERIA GRANDE
Via Friuli 9/11
40060 Osteria Grande IT

Ottava

TUBO NERO TONDO

12C5068666 1 PAC

220765 .043 .202 .022 .0044 .0012 .030 .070 .0406 .102 .216 .42 .405 .347 .315

58002731 TNT041 219.10x 4.00|Ex 6000 P23STR1 EN10217-1 1821908419/10 SCORTA ETA Data 23/03/2012

TUBO NERO TONDO

11C5044512 1 PAC

120858 .075 .506 .007 .0140 .0110 .037 .021 .0020 .020 .032 .07 .399 .339 .32.0

58002787 TNT041 219.10x 6|Ex 6000 P23STR1 EN10217-1 1821908419/20 SCORTA ETA Data 23/03/2012

TUBO NERO TONDO

11C5044513 1 PAC

120858 .075 .506 .007 .0140 .0110 .037 .021 .0020 .020 .032 .07 .399 .339 .32.0

Sede legale e amministrativa:
via Brocchieri 16
46040 Gazzoldo degli Ippoliti
Mantova-Italy
Tel. +39 - 0376 685 685
Fax. +39 - 0376 685 600
www.gruppanancaglia.com

Destinatario Merci
SPETTACOLARE MARCEGAGLIA SPA OSTERIA GRANDE
Via Friuli 9/11
40060 Osteria Grande IT

N° Partita
Q.tà
Colata
C (%)
Mn (%)
Si (%)
P (%)
S (%)
Al (%)
Cr (%)
Mo (%)
Cu (%)
EC.⁻¹ (%)
Rm [N/mm²] (%)
ReH [N/mm²] (%)
A5 (%)

Numero
Creato il
N° Consegna
Def
N° doc.
8203204962
27/03/2012
2003001161

Controllo Qualità
RESP. M.Gorni
Stab. Casalmaggiore

Pagina
3/4

58002731 TNT041 219.10x 4.00|Ex 6000 P23STR1 EN10217-1 1821908419/10 SCORTA ETA Data 23/03/2012

TUBO NERO TONDO

12C5068666 1 PAC

220765 .043 .202 .022 .0044 .0012 .030 .070 .0406 .102 .216 .42 .405 .347 .315

58002787 TNT041 219.10x 6|Ex 6000 P23STR1 EN10217-1 1821908419/20 SCORTA ETA Data 23/03/2012

TUBO NERO TONDO

11C5044512 1 PAC

120858 .075 .506 .007 .0140 .0110 .037 .021 .0020 .020 .032 .07 .399 .339 .32.0

58002731 TNT041 219.10x 4.00|Ex 6000 P23STR1 EN10217-1 1821908419/10 SCORTA ETA Data 23/03/2012

TUBO NERO TONDO

11C5044513 1 PAC

120858 .075 .506 .007 .0140 .0110 .037 .021 .0020 .020 .032 .07 .399 .339 .32.0

Blasone: Sce
CREME N. 241+235 C. 23/16/12
N. TUBI..... M.T. KG. 260
SNC 107100 1153 6A/12

Note:
Marcato: MM EW EN10217-1 P23STR1 C2 M.G.C.L.
Certichiamo che i prodotti sopra elencati sono conformi alle prescrizioni dell'ordine
Controllo visual e dimensionale OK
N. d'elenco: 10254 Direzione del saggio di prova: longitudinale
Non tralasciarmi Temperature di prova: 22°C±4
EC.⁻¹ = Cr+Cu+Mo+N

Prova di schiacciamento sec. ISO 3492 (EN 10233) OK
Prova di allungamento sec. ISO 6493 (EN 10234) OK
Controllo non distruttivo sec. EN 10246-1/3 OK

Mod. 055M Rev. 3 Data 29-06-09

MARCEGAGLIA

Sede Legale e Amministrativa:
via Brescana 16
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Mantova - Italy
Tel. +39 - 0376 1055
Fax. +39 - 0376 685 800
www.grupparamarcegaglia.com

Denominazione Sociale:
SPETTACOLARE MARCEGAGLIA SPA OSTERIA GRANDE
Via Friuli 9/11
40060 Osteria Grande IT

Nr. Parte	Qta.	Data	C	Mn	Si	P	S	Al	Ca	Mo	Ni	Cu	EC ₁ (%)	Pn/H (N/mm ² (%)	ReH (%)	A5 (%)
11C3011052	1 PAC	150798	0.60	.450	.010	.0080	.0170	.036	.020	.0044	.030	.050	.10	388	322	33.5
11C3011054	1 PAC	150798	0.60	.450	.010	.0080	.0170	.036	.020	.0044	.030	.050	.10	388	322	33.5
11C3011056	1 PAC	150798	0.60	.450	.010	.0080	.0170	.036	.020	.0044	.030	.050	.10	388	322	33.5

58002694 TNT041 114.30x 3.20(E)x 6000 P235TR1 EN10217-1 1811915B40/10 SCORTA ETA Data 05/08/2011
TUBO NERO TONDO

11C3011052	1 PAC	150798	0.60	.450	.010	.0080	.0170	.036	.020	.0044	.030	.050	.10	388	322	33.5
11C3011054	1 PAC	150798	0.60	.450	.010	.0080	.0170	.036	.020	.0044	.030	.050	.10	388	322	33.5
11C3011056	1 PAC	150798	0.60	.450	.010	.0080	.0170	.036	.020	.0044	.030	.050	.10	388	322	33.5

3.1 CERTIFICATO DI COLLAUDO EN 10204
Numero: 10313734847

Crearo.it

300397011

Prodotto: Controllo Qualità
N° Cognosca: 8203113022
Data: 30/08/2011
RESp. M. Genni
Stato: Consegna

3/3

www.grupparamarcegaglia.com

Bassani Srl
211+235.....22/6/12
.....Ett.....C.....KG.....98
DST 1001001153 6/7/12

Note:
Narrato: NM EN 10217-1 P235 161C2 M.G.C.
Controllo tecnico e dimensionale OK.
EC_1 = Cr-Cu-Mn+N
Prova di schiacciamento soc. ISO 8482 (EN 10233) CK
Prova di sfargamento soc. ISO 8473 (EN 10234) OK
Controllo non distruttivo soc. EN 10246-10 CK

Mod. USM Rev.3 Data 28-06-09



宝山钢铁股份有限公司
BAOSHAN IRON & STEEL CO., LTD.

制造厂：不锈钢分厂

产品质量证明书

INSPECTION CERTIFICATE

上海市宝山区长江路580号 邮编 200431
580 CHANGJIANG ROAD, BAOSHAN DISTRICT
200431 SHANGHAI, P.R.CHINA
TEL (021)26033066
FAX (021)26034656

Manufacturer: STAINLESS STEEL BRANCH

订货单位 CUSTOMER	BADSTEEL TRADING EUROPE GMBH		产品名称 PRODUCT	HOT ROLLED STEEL COILS PICKLED AND OILED	
收货单位 PURCHASER	BADSTEEL TRADING EUROPE GMBH		代号 CUSTOMER NO.	900005	证书号 CERTIFICATE NO.
标准 SPECIFICATION	EN 10111 DD13 QUALITÀ A CALDO CON CAPACITÀ DI CONSEGNA CON RCS. DDT N. 5506 DEL 23.02.09		客户订单号 CUSTOMER ORDER NO.		
签发日期 DATE OF ISSUE	2008/09/23		许可证号 LICENSE NO.	XLY403003	合同号 CONTRACT NO.

序号 NO.	钢卷/捆包号 C.DL/PACK NO.	件数 QTY	件号 HEAT NO.	规格及重量 MATERIAL DESCRIPTION	化学成分 CHEMICAL COMPOSITION % (碳硫分析 HEAT ANALYSIS)						拉伸试验 TENSILE TEST (G.L.=L.1)									
					厚度 THICK. mm	宽度 WIDTH mm	长度 LENGTH mm	张数 SHEETS	重量 MASS (kg)	C $\times 10^2$	Si $\times 10^2$	Mn $\times 10^2$	P $\times 10^3$	Al $\times 10^3$	屈服 Y.S. $\times 10$	T.S. $\times 10$	抗拉 EL. MPa	伸长 EL. %	弯曲 BEND TEST	硬度 HV mm
1	CC052900420	1	164908	6.00 1500 COIL	16530	5	1	19	8	12	36				235	315	43.0	OK	OK	
2	CC052900430	1	164908	6.00 1500 COIL	11360	3	1	19	8	12	36				235	315	43.0	OK	OK	
3	CC052900530	1	165109	6.00 1500 COIL	11830	3	1	16	5	15	37				240	310	42.0	OK	OK	
4	CC053000320	1	165109	6.00 1500 COIL	10450	3	1	16	5	15	37				235	340	44.0	OK	OK	
5	CC053000330	1	165109	6.00 1500 COIL	11610	3	2	18	5	15	37				235	340	44.0	OK	OK	
6	CC053000420	1	165109	6.00 1500 COIL	10340	3	3	18	6	11	50				250	340	41.0	OK	OK	
7	CC053000620	1	165109	6.00 1500 COIL	9600	3	1	18	5	15	37				235	335	45.0	OK	OK	
合计 Total		7							75720											
备注 REMARKS																				
注释 NOTES																				

Y.S.=YIELD STRENGTH 701 HRB 702 HRF	T.S.=TENSILE STRENGTH 703 HR30T 704 HV	G.L.=GAUGE LENGTH *0.9HR15T	EL=ELONGATION *0.8HR15T	1.1±5.5% (L0) *0.7 HARDNESS	1.2±5.0% (L0)	1.3±8.0% (L0)	1.4=200MM	L.4=200MM	L.5=11.5% (L0)
WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE MATERIAL SPECIFICATION.									
会验者 SURVEYOR TO								Hu Yue 制造部部长 胡越 MANAGER OF MANUFACTURE MANAGEMENT DEP.	

Code of Practice 00303020374



TEST REPORT UNI EN 10204-2.2 - DIN 50049/2.2-ISO 404

Page 1/1

		Organismo di controllo Checking Entity IF01	Customer Città - Customer BARBIERI S.R.L.	Ordine Cliente Customer Order OF374	Ordine N°01 Order 0000068855	Quantità - Steel Grade EN 10111 DD12 - chiaro	Disegno N. - Customer Product Code ML-P000000000012		
		Produttore Steelmaker X	Dest.M. SH04940 BARBIERI S.R.L.		Spessore Thickness 4.00	Larghezza Width 1.000,00	Lunghezza Length 3.000,00	Il Base 0,00	
		PROVA DI TRAZIONE TENSILE TEST				RESILLENZA - IMPACT TEST			
		Peso Parte Weight (Kg)	Orientamento Test Direction	Prova Test Sample	Rev's MPa	Rm MPa	A%	HRB	Durezza Hardness
N°Partita SAP ID:	N. Colata Heat Number	2.055,000	X	230	350	0,657	34,00	n	1 Hard 2 Frost 3 Centile
0001693064	117360								
0001693064W									

ANALISI CHIMICA DEL PRODOTTO
CHEMICAL ANALYSIS

N. Colata Heat Number	C	Mn	P	S	Si	Al	Ni	Cr	Mo	V	Cu	Ti	B	Nb
117360	0,03000	0,27700	0,01200	0,03000	0,03600		0,04000			0,05000				

I RISULTATI PROVENGONO DA PROVE EFFETTUATE SULLA BASE DI CONTROLLI NON SPECIFICI
THE TEST RESULTS ARE OBTAINED FROM NON-SPECIFIC INSPECTION

Confidiamo che i prodotti sopra elencati sono conformi ai richiesti dell'ordine
We hereby certify that the above mentioned materials have been delivered in accordance with the terms of order

MODO DI ELABORAZIONE DELL'ACCIAIO:
CONVERTITORE CON OSSIGENO PURO, COLATA
-Steelmaking Process: Converter with pure Oxygen
CONTINUA Laminazione e temperatura controllata
-Continuous casting
-STATO DI FORNITURA:Laminazione e temperatura controllata
-Delivery Conditions: Controllo Rolling Temperature
Surface and Dimensions Control OK

Riferimento Bollo(DDT) - Invio:
2009713
Riferimento Consegnas - Delivery:
80203265 / 000020

C.Mora

Data: 21/12/2010

K.A. Mora
K.A. Mora

TEST REPORT UNI EN 10204-22 - DIN 50049/2-2-ISO 404



Pag. 1/1

CANESSA S.p.A.
Strada Emilia Ed. 130 C.D. 43012 Fontanellato (PR)
tel. +39 0521 586499 / +39 0521 82729
Cod. Fis. e Reg. Imp. Genova O36882420104
Partita IVA 08218100017

CANESSA S.p.A.
Strada Emilia Ed. 130 C.D. 43012 Fontanellato (PR)
tel. +39 0521 586499 / +39 0521 82729
Cod. Fis. e Reg. Imp. Genova O36882420104
Partita IVA 08218100017

CANESSA S.p.A.
Strada Emilia Ed. 130 C.D. 43012 Fontanellato (PR)
tel. +39 0521 586499 / +39 0521 82729
Cod. Fis. e Reg. Imp. Genova O36882420104
Partita IVA 08218100017

IDENTIFICAZIONE DEL PRODOTTO

PRODUCT IDENTIFICATION

N° Partita SAP ID	Matricola Prodotto Coil Number	N. Colata Heat Number	Peso Partita Weight (Kg)	Orientamento Test Direction	Proveita Test Sample	PROVA DI TRAZIONE TENSILE TEST						Posiz. Posiz.
						Rm/S MPa	Re/S MPa	Rm MPa	Re/ Rm	A% E%	r n	
0001688193	7411024	730026013	1.627.000		X	230	350	0,657	34,00			
0001688201	7411024	730026013	1.662.000		X	230	350	0,657	34,00			
0001688222	7411024	730026013	1.726.000		X	230	350	0,657	34,00			

**ANALISI CHIMICA DEL PRODOTTO
CHEMICAL ANALYSIS**

N. Colata Heat Number	C	Mn	P	S	Si	Al	Ni	Cr	Mo	V	Cu	Ti	B	Nb
730026013	0,05350	0,28500	0,01250	0,00860	0,01980	0,04070	0,02150	0,02420	0,00150	0,02910	0,00010			

**I RISULTATI PROVENGONO DA PROVE EFFETTUATE SULLA BASE DI CONTROLLI NON SPECIFICI
THE TEST RESULTS ARE OBTAINED FROM NON-SPECIFIC INSPECTION**

Certificiamo che i prodotti sopra elencati sono conformi ai requisiti dell'ordine
We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order
-MODO DI ELABORAZIONE DELL'ACCIAIO:
CONVERTITORE CON OSSIGENO PURO, COLATA
-Steelmaking Process: Converter with pure Oxygen
Continuous casting
STATO DI FORNITURA:Laminazione a temperatura controllata
-Delivery Condition: Controlled Rolling Temperature

PROVA DI PIEGA: soddisfacente - Bending Test: OK

CONTROLLI VISIVO E DIMENSIONALE: Soddisfacente

Surface and Dimensions Control: OK

Riferimento Bollo(DDT) Invoice:

209604

Riferimento Consegnna-Delivery:

80202816 / 000010

Collaudatore - Tester: **C. Mora**

Data: 16/12/2010



产品质量证明书
INSPECTION CERTIFICATE

制造厂：宝钢分公司

Manufacturer: BAosteel Branch

上海市宝山区富锦路 885 号 邮编 201900
No.885 Fujin ROAD, BAOSHAN DISTRICT
201900 SHANGHAI, P.R. CHINA
TEL (021)26649104
FAX (021)26649104

订货单位 CUSTOMER		BAOSTEEL TRADING EUROPE GMBH				产品名称 PRODUCT		HOT ROLLED COILS PICKLED AND OILED													
收货单位 PURCHASER		BAOSTEEL TRADING EUROPE GMBH				代号 CUSTOMER'S NO.		900005 CERTIFICATE NO. XH1015104002 01													
标准 SPECIFICATION		EN 10111 DD11				客户订单编号 CUSTOMER ORDER NO.															
签发日期 DATE OF ISSUE		2007/12/03		交货日期 DATE OF DELIVERY		2007/12/03		合同号 CONTRACT NO. XH10151F02													
许可证号 LICENSE NO.																					
化学成分 CHEMICAL COMPOSITION % (熔炼分析 HEAT ANALYSIS)																					
(G. L= L. 3)																					
序号 NO.		件数 QTY		炉号 HEAT NO.		规格及重量 MATERIAL DESCRIPTION		拉伸试验 TENSILE TEST													
厚度 THICK		宽度 WIDTH		长度 LENGTH		重量 MASS		Y.S. T.S. MPa													
mm		mm		mm		kg		x10 ² x10 ³ x10 ⁴ x10 ⁵ x10 ⁶													
SHEETS		COIL		COIL		COIL		x10 x10 x10 x10 x10													
1	115260201	1	267566	2.50	125.0	COIL	Y/ZHJ	9620	4	1	26	14	8	48	219	343	46	OK			
2	115260202	1	267566	2.50	125.0	COIL	Y/ZHJ	11090	4	1	26	14	8	48	219	343	46	OK			
3	115260301	1	267567	2.50	125.0	COIL	Y/ZHJ	9750	3	1	27	10	9	51	225	345	46	OK			
4	115260302	1	267567	2.50	125.0	COIL	Y/ZHJ	10630	3	1	27	10	9	51	225	345	46	OK			
5	115260401	1	267710	2.50	125.0	COIL	Y/ZHJ	9870	3	2	26	15	7	54	231	352	46	OK			
CERTIFICATO E' CONFORME ALLA QUANTITA' REFERENTE AI DDTN (C83 Del 27/05/08)										WE MULITAFIACIATI S.r.l. GIANCARLO BRANCA											
合计 Total		5				50960															
备注 REMARKS																					
注释 NOTES		Y.S.= YIELD STRENGTH *01:HRB		T.S.= TENSILE STRENGTH *02:HRF		EL= ELONGATION *03:HR30T		G.L.= GAUGE LENGTH *04:HV		L1= 5. 65SQRT (FO) *05:HR15T		L2= 50MM *06:ERIGSEN		L3= 80MM *07:ERIGSEN		L4=200MM *08:ERIGSEN		L5=1.3SQRT (FO)		L6=1.13SQRT (FO)	
会验者 SURVEYOR TO		本产品已按上述要求进行制造和检验，其结果符合要求，特此证明。 WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE MATERIAL SPECIFICATION. INSPECTION CERTIFICATE ACCORDING TO EN10204 3.1.B								制造管理部部长 MANAGER OF MANUFACTURE MANAGEMENT DEP.											



Acciai Speciali :
Laminati - Trafilati - Pelati - Rettificati
Barra Temprata - Trattamenti Termici

Società per azioni - Capitale Sociale Euro 5.000.000,00 i.v.
Isc. Trib. 11814 - N. Matr. MC00469 - R.E.A. 126901
Codice Fiscale 02144330354 - Partita IVA IT 01349950968
Sede Legale Amministrativa e Commerciale:
41100 Modena - Via Emilia Ovest, 960/A
Tel. 059/0.59.824911 - Fax 059/0.59.818194
Internet: www.stilma.it E-mail: stilma@stilma.it

STABILIMENTI

STILMA
41100 MODENA Via Emilia Ovest, 960/A
Tel. 059/0.059 / 324911 - Fax 059/0.059 / 838894

STILMA
41029 S. MAURIZIO - (RE) - Via P. Casalini, 1
Tel. 0539/0.7922 / 352400 - Fax 0539/0.7922 / 352410

STILMA - STAZ. ACCIAI
41018 C. CESARIO sul PANARO (MO) Via del Lavoro, 1-3-5-7-9-11
Tel. 059/0.059 / 923159 - Fax 059/0.059 / 923860

STILMA - LAMINATI MODENA - INT24
41011 CAMPOGALLIANO (MO) Via della Repubblica, 110
Tel. 059/0.059 / 525993 - Fax 059/0.059 / 525106



COCCHE

CERTIFICATO DI COLLAUDO

TEST CERTIFICATE - CERTIFICAT D'ESSAI - WERKPRUFZEUGNIS

N.C. 1.041944/02 DEL 1/10/2007

BOLLA NR. 1BVI 3.212 DEL 1/10/2007
Delivery note n.:
Bulletin n.:
Lieferchein Nr.

ORDINE NR. TELEF. NEVIO
Order n.:
Ordre n.:
Auftrag n.

SPETT. LE DITTA

LA COMMERCIALE ACCIAI S.P.A.

VIA L. NOBILI 340/A-C.P.37-MODENA 8
41100 MODENA

DESCRIZIONE MATERIALE - DESCRIPTION OF MATERIAL - DESCRIPTION MATERIEL - MATERIALBESCHREIBUNG

ACCIAIO: / Steel:	C 45	NT+SL h7 T	PROFILO: / Shape:	20
Acer / Stahl:			Profil: / Profil:	

COLATA: / Haet:	1.041944/02	(GS049081)	COMMESSA: / Order:	4060 / 20
Couleute / Schmelze:			Commande: / Auftrag:	

PESO: / Weight: KG	967,00
Poids/Gewicht:	

COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Al	Pb
0,455	0,730	0,234	0,008	0,028							0,256
Sn	Ti	Nb	As	B	N	C.E.					

CARATTERISTICHE MECCANICHE - MECHANICAL PROPERTIES - CARACTÉRISTIQUES MÉCANIQUES - MECHANISCHE EIGENSCHAFTEN

TRATTAMENTO TERMICO DEL SAGGIO Heat Treatment - Traitement thermique Wärmebehandlung				GRANO Grain size DimGrain-Kerngrossz	TEMP. PROVA DI RESILLENZA C Temp. Impact test C Temp. essai résilience C Temp. Körberstagsprobe C	DUREZZA SUPERF. Surface hardness Dureté superficielle Randhärte	PROFOUNDITA' DI TEMPRA Hardening depth Profondeur de température Härtetiefe	Durez. Prof. Temp. Hardness Dureté Härte
Rm/Rp0,2 N/mm ²	Rm N/mm ²	A5 %	Z %	HB	K	J	MIN	MAX
709								

PROVA JOMINY - JOMINY TEST - ESSAI JOMINY - STIRNABSCHRECKVERSUCH

mm. A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
mm. B	1,5	2	3	5	7	9	11	13	15	20	25	30	35	40	45	50									

Caratteristiche meccaniche	DI RIFERIMENTO	Logo
Caratteristiche di Collaudo:	UNI EN 10204:2005 2.2	STILMA S.p.A.
NOTE :		

N.B.: CERTIFICATO CONFORME ALL'ORIGINALE ARCHIVIATO PRESSO LA NOSTRA SEDE
CERTIFICATE COMPLIES WITH THE ORIGINAL ONE ARCHIVED IN OUR HEADQUARTERS

Meln Arciai Castello S.p.A.

BOHNETTICCO DI ANALYST CHEMIST DI COLLET
ANALYTICAL CHEMISTS CERTIFICATE
Via Marzabotto 27/B - 40030 Funo di Argelato (BO)
Tel. 051/864038 - Fax 051/863220

corranti@mathtt.cantello.it

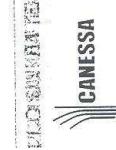


Arceo Mittel



TEST REPORT UNI EN 10204-2.2 - DIN 50049/2.2-ISO 404

CANEVASSA S.p.A.
Strada Emilia Est 130 C/D, 43012 Fontanellato (PR)
tel. +39 0521 827811 Fax +39 0521 827829
COD. FISC e Reg. Imp. Genova 03688240104



CANESSA S.p.A.
Strada Emilia Ed.1130 Cld.43012 Fonterelato (PR)
15030 Fisc. e Reg. Imp. Genova 03688240104
Partita IVA 082180017

TEST REPORT UNI EN 10204-2.2 - DIN 50049/2.2-ISO 404

Pag. 1/1

IDENTIFICAZIONE DEL PRODOTTO

PRODUCT IDENTIFICATION

PROVA DI TRAZIONE TENSILE TEST				DUREZZA Hardness				RESILLENZA Impact Test									
N° Partita	Matricola Prodotto	N. Colata	Peso Partita Weight (Kg)	Orientamento	Prova di Test Direction	Rivolti ReYS	Rm MPa	A%	E%	r	n	HRB	1 Head	2 Foot	3 Cento	Posiz. Posiz.	Vaori singoli - Single Values
0001688193	7411024	730026013	1.627,000		X	230	350	0,657	34,00								
0001688201	7411024	730026013	1.662,000		X	230	350	0,657	34,00								
0001688222	7411024	730026013	1.726,000		X	230	350	0,657	34,00								

ANALISI CHIMICA DEL PRODOTTO

CHEMICAL ANALYSIS

N. Colata	C	Mn	P	S	Si	Al	Ni	Cr	Mo	V	Cu	Ti	B	Nb	
Heat Number															
730026013															
0,05350															
	0,28500	0,01250	0,00860	0,01980	0,04070	0,02150	0,02420	0,00150	0,02910	0,00010					Riferimento Bolla(DDT) - Invoice:
															2098604
															Riferimento Consegn-a-Delivery:
															80202816 / 00010
I RISULTATI PROVENGONO DA PROVE EFFETTUATE SULLA BASE DI CONTROLLI NON SPECIFICI THE TEST RESULTS ARE OBTAINED FROM NON-SPECIFIC INSPECTION															
Certichiamo che i prodotti sopra elencati sono conformi ai requisiti dell'ordine We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order															
-MODO DI ELABORAZIONE DELL'ACCIAIO: CONVENTORIA CON OSSIGENO PURO, COLATA Steelmaking Process. Converter with pure Oxygen Continuous casting															
-STATO DI FORNITURA: Laminazione a temperatura controllata Surface and Dimensions Control: OK															
-Delivery Conditions: Controlled Rolling Temperature															
PROVA DI PIEGA: soddisfacente - Bending Test: OK															
CONTROLLI VISIVO E DIMENSIONALE: Soddisfacente															
Collaudatore - Tester: G. Mora															

3-A-57-14

ANALISI

11

3-A-57-14

11

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e' N.º 00178890364
Partita I.V.A.

20 dicembre 2012



S.P.E.T.T.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a coclea ITEM 62CL1 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the screw conveyor ITEM 62CL1 job 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.

BARBIERI COSTRUZIONI MECCANICHE
S.p.A.
MODENA

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 2895/09



S.R.L. - Cap. soc. € 95.000,00

Codice Fiscale e N.º 00178890364
Partita I.V.A.

20 dicembre 2012

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a coclea ITEM 62CL2 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the screw conveyor ITEM 62CL2 job 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.

[Handwritten signature]
BARBIERI COSTRUZIONI
MECCANICHE
S.p.A.
MODENA

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N.º 00178890364
Partita I.V.A.

20 dicembre 2012



S.R.L. - Cap. soc. € 95.000,00

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a coclea ITEM 62CL3 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the screw conveyor ITEM 62CL3 job 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.


BARBIERI COSTRUZIONI
MECCANICHE
MODENA

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28695/09

Codice Fiscale e N.º 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

20 dicembre 2012

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a coclea ITEM 62CL4 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the screw conveyor ITEM 62CL4 job 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3193
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e
Partita I.V.A. N.º 00178890364



20 dicembre 2012

SPETT.

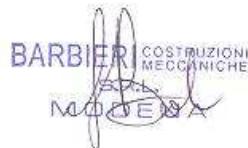
DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a coclea ITEM 62CL6 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the screw conveyor ITEM 62CL6 job 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.



BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28695/09

Codice Fiscale e N.° 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

17 dicembre 2012

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a nastro ITEM 64N1 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the belt conveyor ITEM 64N1 - JOB N° 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.

Le constructeur certifie que le transporteur à bande ITEM 64N1 commande 2F11 a passé avec succès le contrôle technique final au sein de ses propres établissements et que les matériaux utilisés pour la construction sont adaptés au type de machine.

BARBIERI COSTRUZIONI
MECCANICHE
S.p.A.
MODENA

BARBIERI COSTRUZIONI MECCANICHE s.r.l.
SEDE AMMINISTRATIVA E STABILIMENTO
41100 MODENA - ITALIA - VIA MORANE, 264
TEL. 059 30.00.18 - 059 30.00.23
TELEFAX 059 30.00.95
e-mail: info@barbieri-cm.it

REGISTRO IMPRESE TRIB. DI MODENA N. 3190
ALBO NAZIONALE COSTRUTTORI N. 28895/09

Codice Fiscale e N. 00178890364
Partita I.V.A.



S.R.L. - Cap. soc. € 95.000,00

5 dicembre 2012

SPETT.

DESMET BALLESTRA S.P.A.
Via P. Portaluppi, 17
20138 MILANO

Rif: Vs. ordine n° 121235 del 28-05-2012

Si certifica che il trasportatore a nastro ITEM 65N1 commessa 2F11 è stato collaudato a vuoto, con esito positivo, presso il nostro stabilimento e che i materiali impiegati per la costruzione sono idonei a tale impiego.

We certify the belt conveyor ITEM 65N1 - JOB N° 2F11 has been positively tested without material at our factory.

We further certify that all the materials used for this conveyor are suitable for the use.

Le constructeur certifie que le transporteur à bande ITEM 65N1 commande 2F11 a passé avec succès le contrôle technique final au sein de ses propres établissements et que les matériaux utilisés pour la construction sont adaptés au type de machine.

BARBIERI COSTRUZIONI
MECCANICHE
S.p.A.
MODENA

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N° DRW. N° NPF 80181-000

CLIENTE DESMET - BAUWESTRA
CLIENT

COMMESA N° 2F. 11 ITEM 64 N 1
JOB

TIPO TRASPORTATORE NPF 800 - I 15400 COM CARRELLO
CONVEYOR TYPE

MATRICOLA TRASPORTATORE 12193
CONVEYOR CODE

MOTORE : MARCA BROOK MATRICOLA ..
MOTOR : BRAND CODE ..

POTENZA : KW 3 POLI N° 4 V= 415 Y 50
POWER POLES

ASSORBIMENTO MAX TARGA A 5.95 COS. Ø = 0.82
LABEL ABSORBED CURRENT

RIDUTTORE TIPO MOTOVARIO R= 1:78,92 MATRICOLA 2008120021
REDUCER TYPE B-103 CODE ..

VARIATORE TIPO / MATRICOLA /
VARIATOR TYPE CODE ..

TEST DATA - DATI RILEVATI

ASSORB. AMPERE : CON TRASPORT. A VUOTO N. Min. Max.
ABSORBED CONVEYOR EMPTY B...2,7 A/..... A
H...2,6 A/..... A

ASSORB. AMPERE : SPUNTO A VUOTO 7,0 A (V. 380/50)
ABSORBED CONVEYOR STARTING

VELOCITÀ RILEVATA GIRI/1' Vel.min. Vel.max
ACTUAL SPEED 18,9

LUNGHEZZA RILEVATA 15600 LARGHEZZA NASTRO 800
ACTUAL LENGTH BELT WIDTH

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 17/12/2012

FIRMA Mauro Luca

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N° NPF 3081-002
DRW. N°

CLIENTE BAUWESTNA
CLIENT

COMMESMA N° 2F11 ITEM 65N1
JOB

TIPO TRASPORTATORE ANASTMO CON BOOM
CONVEYOR TYPE

MATRICOLA TRASPORTATORE 121P4
CONVEYOR CODE

MOTORE : MARCA BMOOK MATRICOLA A DA POSAG-PTE
MOTOR : BRAND CODE LK 78P654

POTENZA : KW 11 POLI N° 4 V= 415, +10% Hz 50
POWER POLES

ASSORBIMENTO MAX TARGA A 244,1 COS.Ø = 0,77
LABEL ABSORBED CURRENT

RIDUTTORE TIPO R= 1:92,18 MATRICOLA
REDUCER TYPE CODE

VARIATORE TIPO ✓ MATRICOLA
VARIATOR TYPE CODE

TEST DATA - DATI RILEVATI

ASSORB. AMPERE : CON TRASPORT. A VUOTO Min. A/1,3 Max. A/1,5 V. 380/50
ABSORBED CONVEYOR EMPTY A/1,3 A/1,5 A/1,5 A

ASSORB. AMPERE : SPUNTO A VUOTO 2,6 A (V.)
ABSORBED CONVEYOR STARTING

Vel.min. _____ Vel.max. _____

VELOCITÀ RILEVATA GIRI/1' ACTUAL SPEED 10,5 m/'

LUNGHEZZA RILEVATA 10,36 LARGHEZZA NASTRO 300
ACTUAL LENGTH BELT WIDTH

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 28/11

FIRMA [Signature]

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N° 041-800-000
DRW. N°

CLIENTE DESMET BALLESTRA
CLIENT

COMMESSA N° 2F 11 ITEM 67CL1
JOB

TIPO COCLEA A CANALA 300 Ø 1 2800
SCREW CONVEYOR TYPE

MATRICOLA COCLEA 12195
SCREW CONVEYOR CODE

MOTORE : MARCA Brook MATRICOLA UV.852371
MOTOR : BRAND B-DA 132 M4/8 CODE

POTENZA : KW 5,5 POLI N° 4/8 V= 415 Y Hz 50
POWER POLES

ASSORBIMENTO MAX TARGA COS.Ø = 0,91 A 13,2
LABEL ABSORBED CURRENT

RIDUTTORE TIPO KOTOVARI R= 1:17,67 MATRICOLA 2008120025
REDUCER TYPE H062 CODE

VARIATORE TIPO MATRICOLA
VARIATOR TYPE CODE

TEST DATA - DATI RILEVATI

	Vel.min.	Vel.max
ASSORB. AMPERE : CON COCLEA A VUOTO	N <u>2,3...A</u>	<u>3,4...A</u>
ABSORBED CONVEYOR EMPTY	B <u>2,4...A</u>	<u>3,4...A</u>
	M <u>2,3...A</u>	<u>3,7...A</u>

ASSORB. AMPERE : SPUNTO COCLEA A VUOTO 28,4...A (V. 380/50)
ABSORBED CONVEYOR STANTE

	Vel.min.	Vel.max
VELOCITÀ RILEVATA GIRI/1'	31	62

ATTUAL SPEED

LUNGHEZZA RILEVATA 2800 DIAMETRO ELICA 300x150x300/114 DK
ACTUAL LENGTH SCREW DIAMETER

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 20/12/2012

FIRMA Macchineria lea...

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

**SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO**

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N°
DRW. N° 041-801-000

CLIENTE DESMET BALLESTRA.
CLIENT

COMMESSA N° 2F 11 ITEM 62CL2
JOB

TIPO COCLEA A CANALA φ 300 L 2700
SCREW CONVEYOR TYPE

MATRICOLA COCLEA 12196
SCREW CONVEYOR CODE

MOTORE : MARCA BROOK MATRICOLA U.Y.852.37.0.
MOTOR : BRAND B-DA 132 M 4/8 CODE

POTENZA : KW 5,5 POLI N° 4/8 V= 415 Y HZ 50
POWER POLES

ASSORBIMENTO MAX TARGA COS.Φ = 0,91 A 13,2 Y
LABEL ABSORBED CURRENT

RIDUTTORE TIPO MOTOVARIO R= 1:17,67 MATRICOLA 200.812.0024
REDUCER TYPE H 062 CODE

VARIATORE TIPO / MATRICOLA /
VARIATOR TYPE CODE

TEST DATA - DATI RILEVATI

	<u>Vel.min.</u>	<u>Vel.max.</u>
ASSORB. AMPERE : CON COCLEA A VUOTO	N <u>2,2</u> A/ <u>3,5</u> A	
ABSORBED CONVEYOR EMPTY	B <u>2,3</u> A/ <u>3,3</u> A	
	M <u>2,2</u> A/ <u>3,1</u> A	

ASSORB. AMPERE : SPUNTO COCLEA A VUOTO 21,1 A (V. 380/50) A.V.
ABSORBED CONVEYOR SPUNTO

	<u>Vel.min.</u>	<u>Vel.max.</u>
VELOCITÀ RILEVATA GIRI/1'	<u>35</u> cm	<u>71</u>

ACTUAL SPEED

LUNGHEZZA RILEVATA 2700 DIAMETRO ELICA 300x150x300 114 DX

ACTUAL LENGTH SCREW DIAMETER

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 19/12/2012

FIRMA Mocchetti Luca

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

**SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO**

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N° 041-802-000
DRW. N° 041-802-000

CLIENTE DESNET BALLESTRA
CLIENT

COMMESSA N° 2 F 11 ITEM 62 CL 3
JOB

TIPO COCLEA A CANALE 300 φ L 2700
SCREW CONVEYOR TYPE

MATRICOLA COCLEA 12197
SCREW CONVEYOR CODE

MOTORE : MARCA BROOK MATRICOLA UV 852372
MOTOR : BRAND B-DA 132 M 4/8 CODE

POTENZA : KW 5,5 POLI N° 4/8 V= 45/..... HZ 50
POWER POLES

ASSORBIMENTO MAX TARGA COS.Φ= 0,91 A 13,2/.....
LABEL ABSORBED CURRENT

RIDUTTORE TIPO MOTOVARI R= 1:1767 MATRICOLA 2008120023
REDUCER TYPE H 062 CODE

VARIATORE TIPO / MATRICOLA /
VARIATOR TYPE VARIATOR CODE

TEST DATA - DATI RILEVATI

ASSORB. AMPERE : CON COCLEA A VUOTO 18,2 A (V. 380/50 x V.M.)
ABSORBED CONVEYOR EMPTY

M 2,4 A/ 3,1 A
B 2,2 A/ 2,1 A
H 2,2 A/ 3,2 A

ASSORB. AMPERE : SPUNTO COCLEA A VUOTO 18,2 A (V. 380/50 x V.M.)
ABSORBED CONVEYOR SPUNTO

Vel.min. Vel.max.

VELOCITÀ RILEVATA GIRI/1' 31 62
ACTUAL SPEED

LUNGHEZZA RILEVATA 2700 DIAMETRO ELICA 300x150x300 mm DX
ACTUAL LENGTH SCREW DIAMETER

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 19/12/2012

FIRMA Mecapar...luc...

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

**SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO**

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N° 041-803-000
DRW. N°

CLIENTE DESHET BALLESTRA
CLIENT

COMMESSA N° 2 F 11 ITEM 6244
JOB

TIPO COCLEA A CANALE Ø 300 L 2200
SCREW CONVEYOR TYPE

MATRICOLA COCLEA 12198
SCREW CONVEYOR CODE

MOTORE : MARCA BROOK MATRICOLA UY 852383
MOTOR : BRAND ISDA 132 M4/8 CODE

POTENZA : KW 5,5 POLI N° 4/8 V= 415 Y HZ 50
POWER POLES

ASSORBIMENTO MAX TARGA COS.Φ= 0,91 A 13,2
LABEL ABSORBED CURRENT

RIDUTTORE TIPO HOTOVARIO R= 1:17,62 MATRICOLA 2008120026
REDUCER TYPE H062 CODE

VARIATORE TIPO / MATRICOLA /
VARIATOR TYPE CODE

TEST DATA - DATI RILEVATI

	<u>Vel.min.</u>	<u>Vel.max</u>
ASSORB. AMPERE : CON COCLEA A VUOTO	N <u>2,3</u> A	<u>3,4</u> A
ABSORBED CONVEYOR EMPTY	B <u>2,4</u> A	<u>3,8</u> A
	M <u>2,3</u> A	<u>3,4</u> A

ASSORB. AMPERE : SPUNTO COCLEA A VUOTO 22,6 A (V. 380/50)
ABSORBED CONVEYOR SPINTA

	<u>Vel.min.</u>	<u>Vel.max</u>
VELOCITÀ RILEVATA GIRI/1'	<u>33</u>	<u>65</u>
ACTUAL SPEED		

LUNGHEZZA RILEVATA 2200 ACTUAL LENGTH DIAMETRO ELICA 300x150x300x114 OK
SCREW DIAMETER

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 20/12/2012

FIRMA Meccanica...

BARBIERI
MODENA

COSTRUZIONI
MECCANICHE
ITALY

SCHEDA DI CONTROLLO DIMENSIONALE
E PROVA DI FUNZIONAMENTO

DIMENSIONAL CONTROL DATA SHEET AND TEST ACCORDING:

DIS. N° 041-804-000
DRW. N° 041-804-000

CLIENTE DESMET BALLESTRA
CLIENT

COMMESSA N° 2F 11 ITEM 62 CL 6
JOB

TIPO COCLEA A CANALE 300 φ L 6000
SCREW CONVEYOR TYPE

MATRICOLA COCLEA 12199
SCREW CONVEYOR CODE

MOTORE : MARCA BROOK MATRICOLA LZ 963219
MOTOR : BRANDA-Da 112 MAG-PTO CODE

POTENZA : KW 4 POLI N° 4 V= 410 Y HZ 50
POWER POLES

ASSORBIMENTO MAX TARGA COS.Φ= 0.82 A 783
LABEL ABSORBED CURRENT

RIDUTTORE TIPO HOTOVARIO R= 1:17.67 MATRICOLA 2008120020
REDUCER TYPE H 062 CODE

VARIATORE TIPO MATRICOLA
VARIATOR TYPE CODE

TEST DATA - DATI RILEVATI

ASSORB. AMPERE : CON COCLEA A VUOTO N Vel. min. 4,1 Vel. max /
ABSORBED CONVEYOR EMPTY B 4,3 / A
M 4,2 / A

ASSORB. AMPERE : SPUNTO COCLEA A VUOTO 18,4 A (V. 380/50)
ABSORBED CONVEYOR STANNO

VELOCITÀ RILEVATA GIRI/1' 74 CM Vel. min. / Vel. max /
ACTUAL SPEED

LUNGHEZZA RILEVATA 6000 ... DIAMETRO ELICA 300 x 150 x 300 - 114 DX
ACTUAL LENGTH SCREW DIAMETER

VERIFICA DIMENSIONALE effettuata non effettuata
DIMENSIONAL TEST

DATA 13/12/2012

FIRMA Barbieri Luca

BARBIERICOSTRUZIONI
MECCANICHE
MODENA ITALY**TABLE N° SRI-041-803-1**

JOB N° 2F11

ITEM 62CL4

CODE 12198

ORD.N° 121235

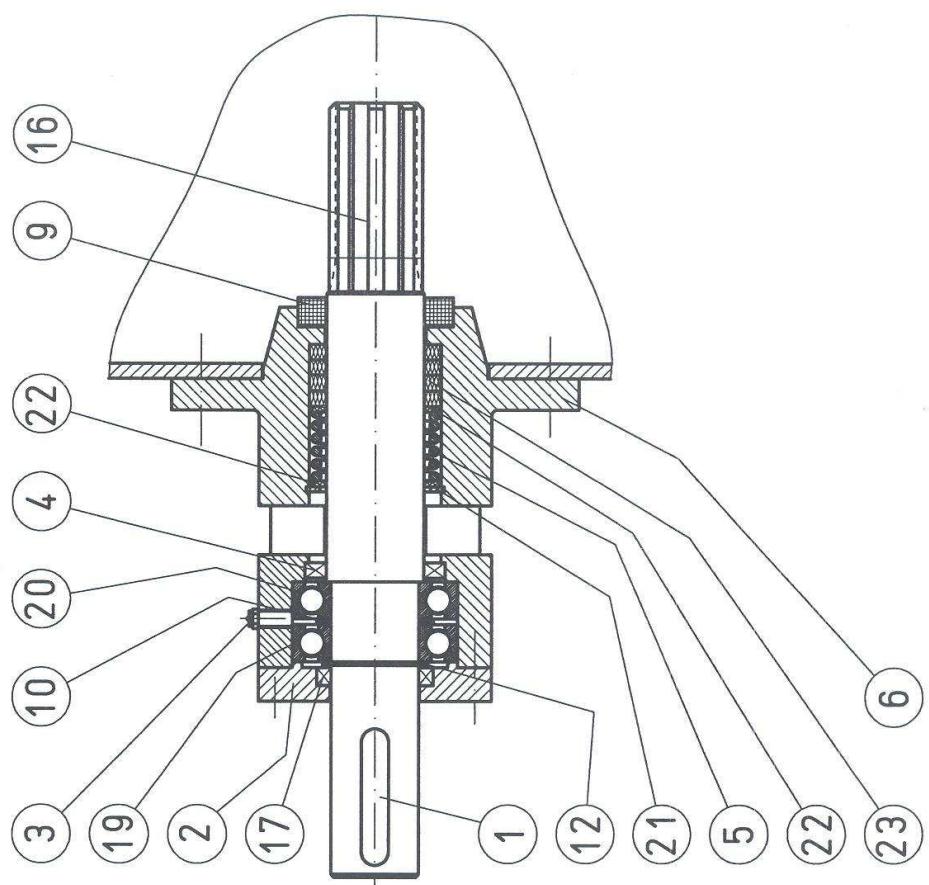
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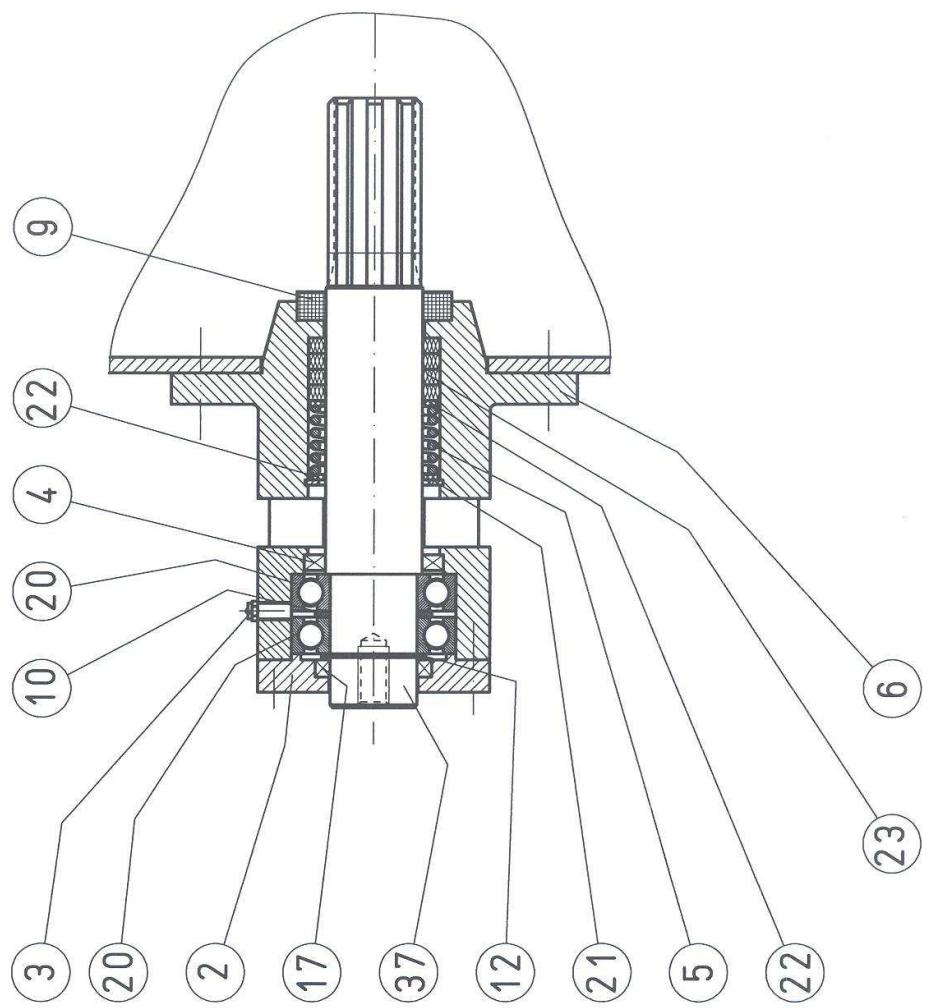
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2	SUPPORT CUP	2	400.623
3	LUBRICATOR	2	11.278
4	SEAL RING	2	11.378
5	HELICAL SPRING	2	122.839
6	SCREW SUPPORT	2	229.239
7	S.S. PROTECTION		
8	FELT		
9	RING	2	400.624
10	WASHER	2	400.627
11	SCREW SHAFT		
12	RING STOP	2	400.628
13	FELT		
14	INTERMEDIATE SUPPORT		
15	DRIVE HUB		
16	DRIVE SHAFT	1	400.604
17	SEAL RING	2	11.388
18	BUSHING		
19	THRUST BALL BEARING	1	400.625
20	BALL BEARING	3	400.626
21	RING STOP	2	16.438
22	WASHER	4	122.879
23	FELT	8	14.738
24	KEY		
25	CONVEYOR FRAME		
26	INTERMEDIATE SHAFT		
27	KEY		
28	SEAL RING		
29	FLIGHT		
30	SPACER		

DATE 01-08-2012

ISSUED BY CANE'

SHEET N° 1

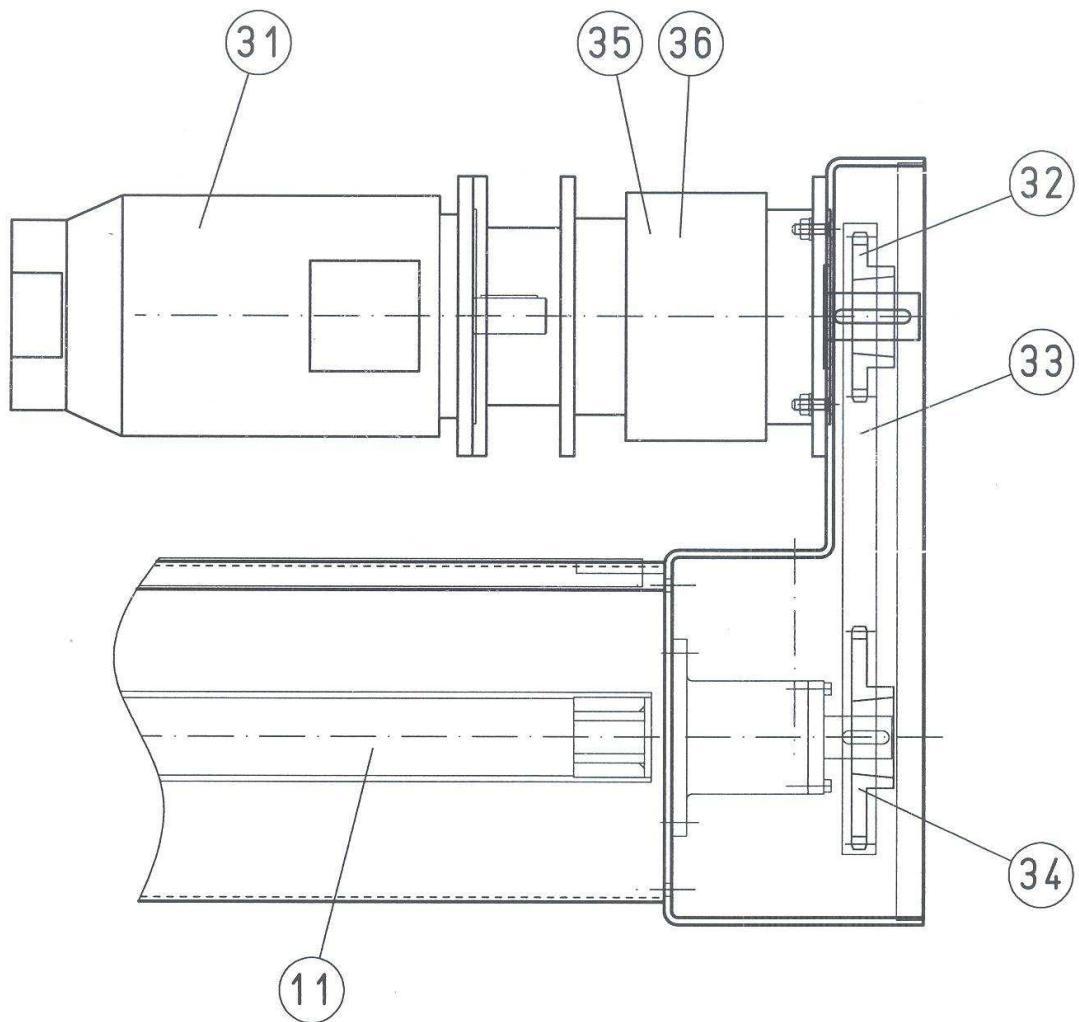




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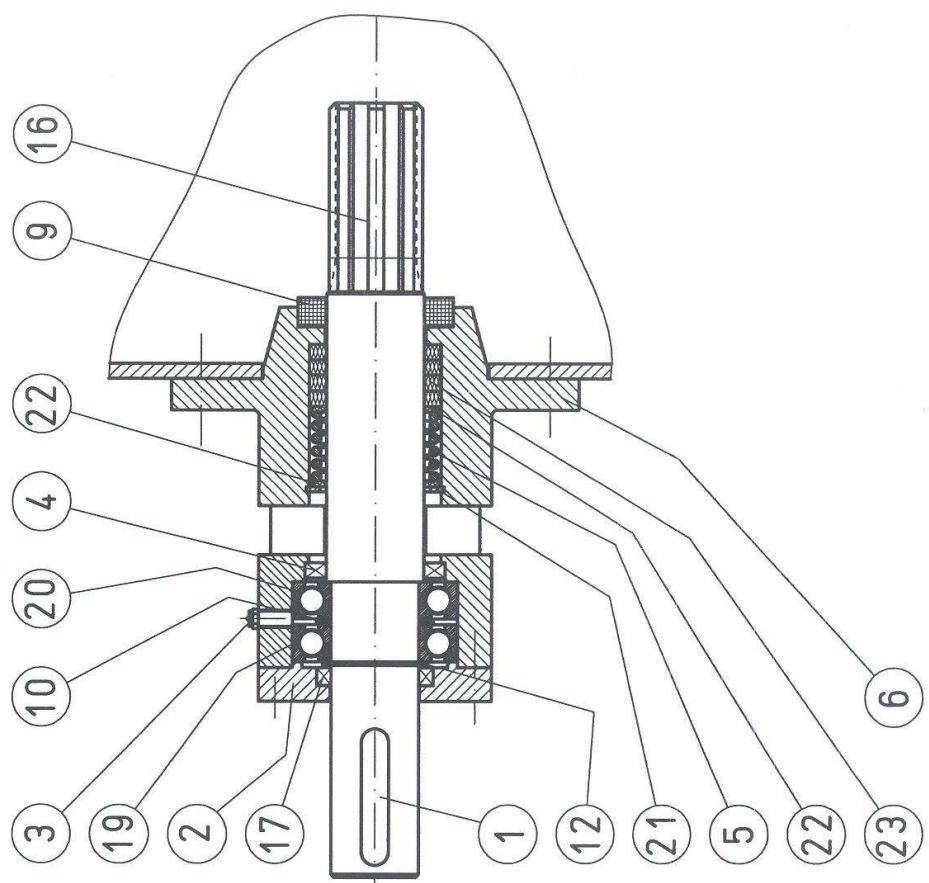


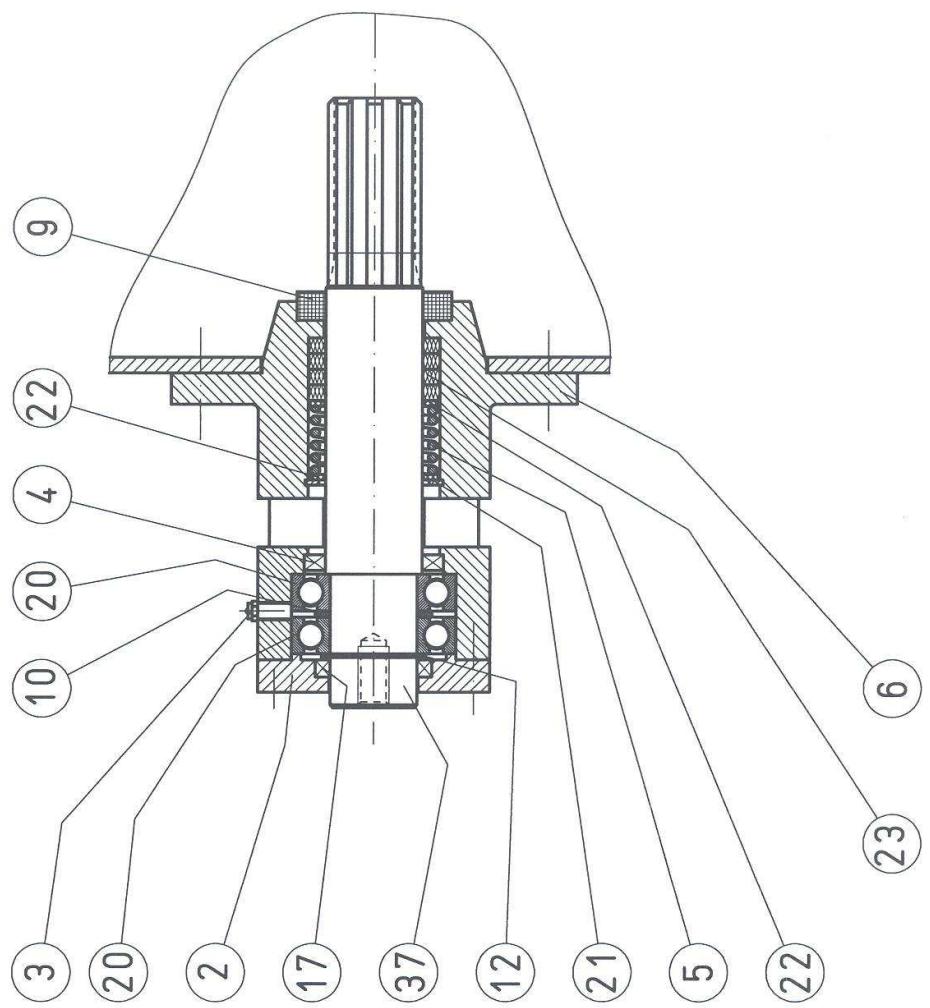
BARBIERI		COSTRUZIONI MECCANICHE	TABLE N° SRI-041-802-1	
MODENA ITALY		JOB N° 2F11		ITEM 62CL3
		CODE 12197		ORD.N° 121235
SCREW CONVEYOR MOD. CC 300/2,70				
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5	HELICAL SPRING	2	122.839	
6	SCREW SUPPORT	2	229.239	
7	S.S. PROTECTION			
8	FELT			
9	RING	2	400.624	
10	WASHER	2	400.627	
11	SCREW SHAFT			
12	RING STOP	2	400.628	
13	FELT			
14	INTERMEDIATE SUPPORT			
15	DRIVE HUB			
16	DRIVE SHAFT	1	400.604	
17	SEAL RING	2	11.388	
18	BUSHING			
19	THRUST BALL BEARING	1	400.625	
20	BALL BEARING	3	400.626	
21	RING STOP	2	16.438	
22	WASHER	4	122.879	
23	FELT	8	14.738	
24	KEY			
25	CONVEYOR FRAME			
26	INTERMEDIATE SHAFT			
27	KEY			
28	SEAL RING			
29	FLIGHT			
30	SPACER			
DATE 01-08-2012	ISSUED BY CANE'	SHEET N° 1		

DATE 01-08-2012

ISSUED BY CANE'

SHEET N° 2

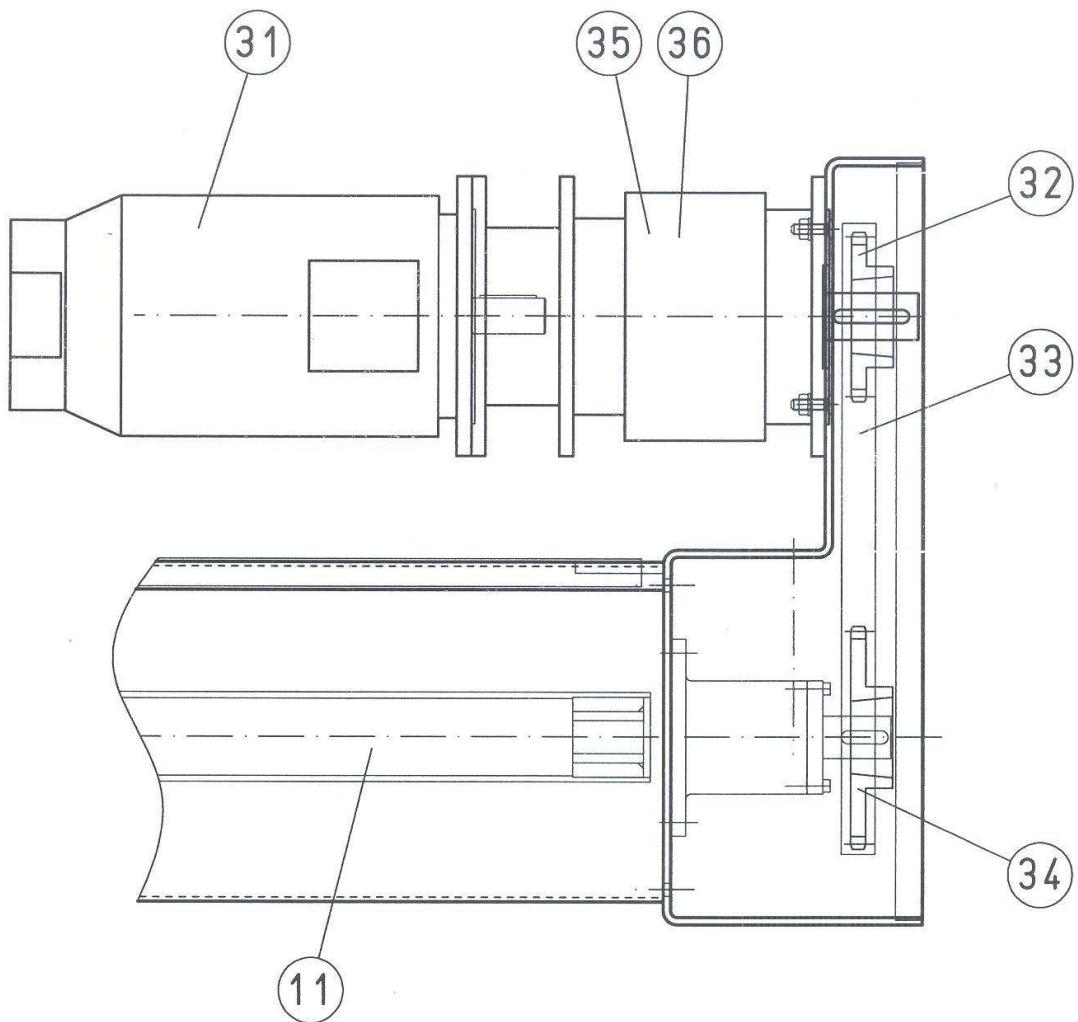




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MECCANICHE
MODENA ITALY**TABLE N° SRI-041-801-1**

JOB N° 2F11

ITEM 62CL2

CODE 12196

ORD.N° 121235

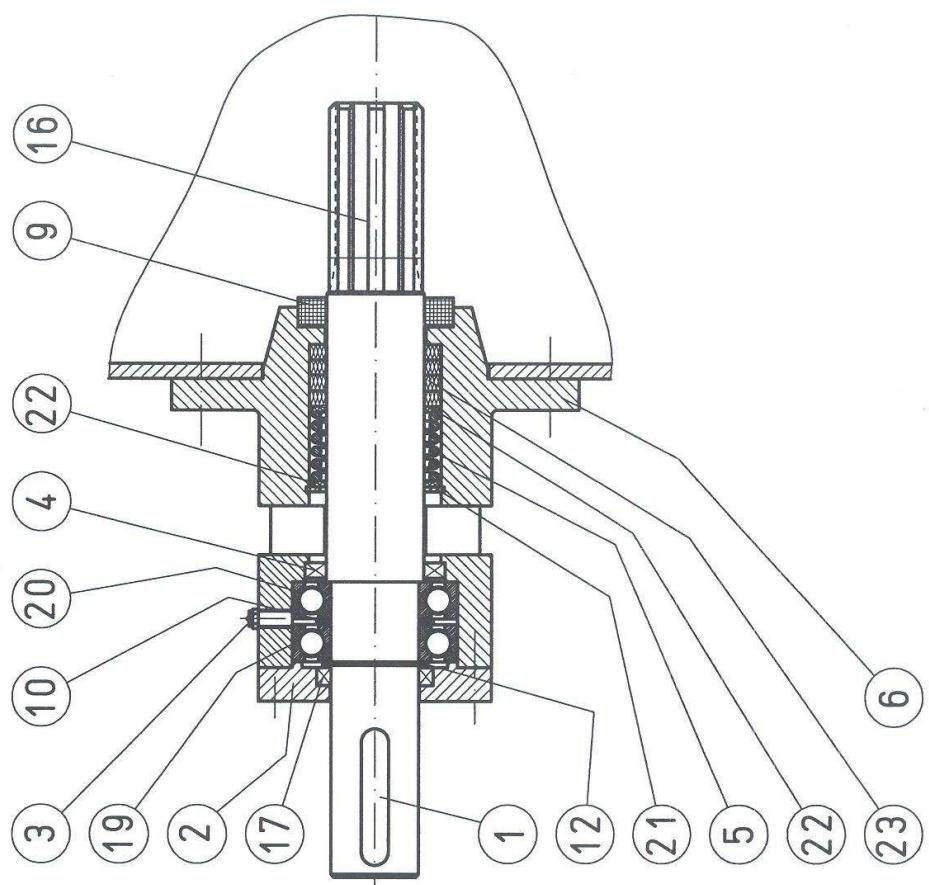
SCREW CONVEYOR MOD. CC 300/2,70

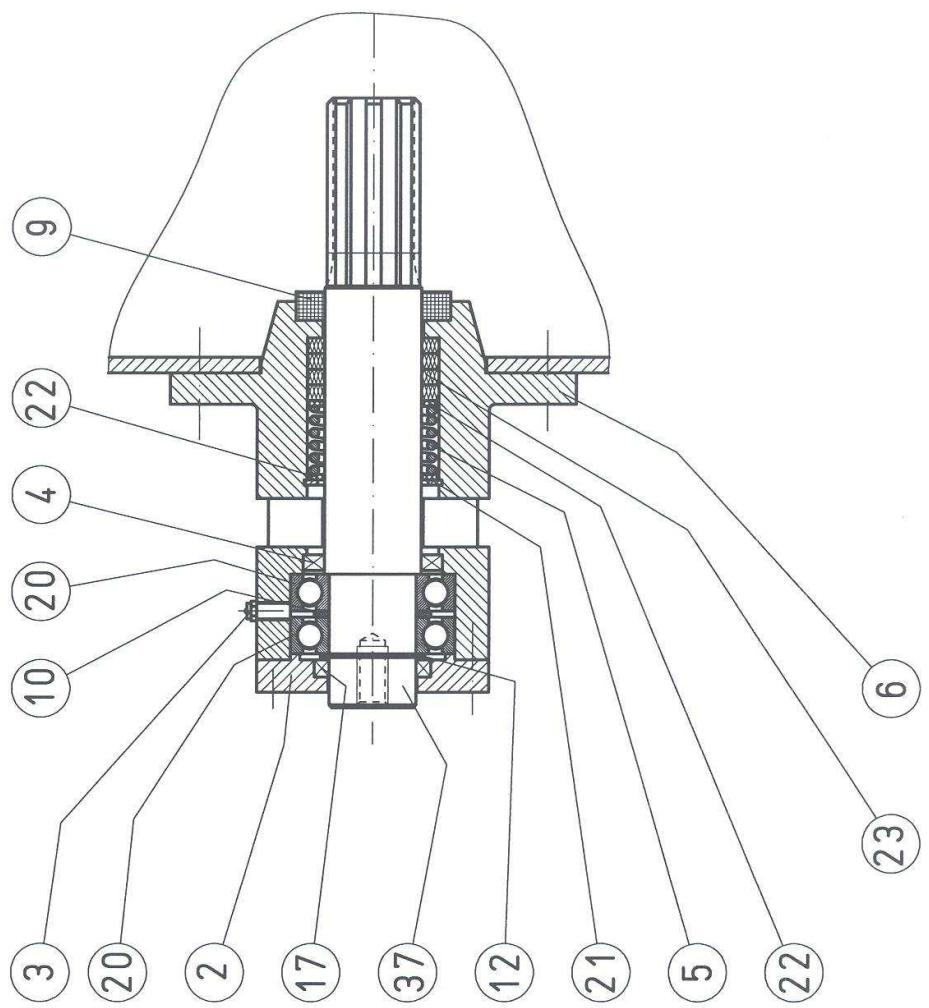
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3	LUBRICATOR	2	11.278
4	SEAL RING	2	11.378
5	HELICAL SPRING	2	122.839
6	SCREW SUPPORT	2	229.239
7	S.S. PROTECTION		
8	FELT		
9	RING	2	400.624
10	WASHER	2	400.627
11	SCREW SHAFT		
12	RING STOP	2	400.628
13	FELT		
14	INTERMEDIATE SUPPORT		
15	DRIVE HUB		
16	DRIVE SHAFT	1	400.604
17	SEAL RING	2	11.388
18	BUSHING		
19	THRUST BALL BEARING	1	400.625
20	BALL BEARING	3	400.626
21	RING STOP	2	16.438
22	WASHER	4	122.879
23	FELT	8	14.738
24	KEY		
25	CONVEYOR FRAME		
26	INTERMEDIATE SHAFT		
27	KEY		
28	SEAL RING		
29	FLIGHT		
30	SPACER		

DATE 01-08-2012

ISSUED BY CANE'

SHEET N° 1

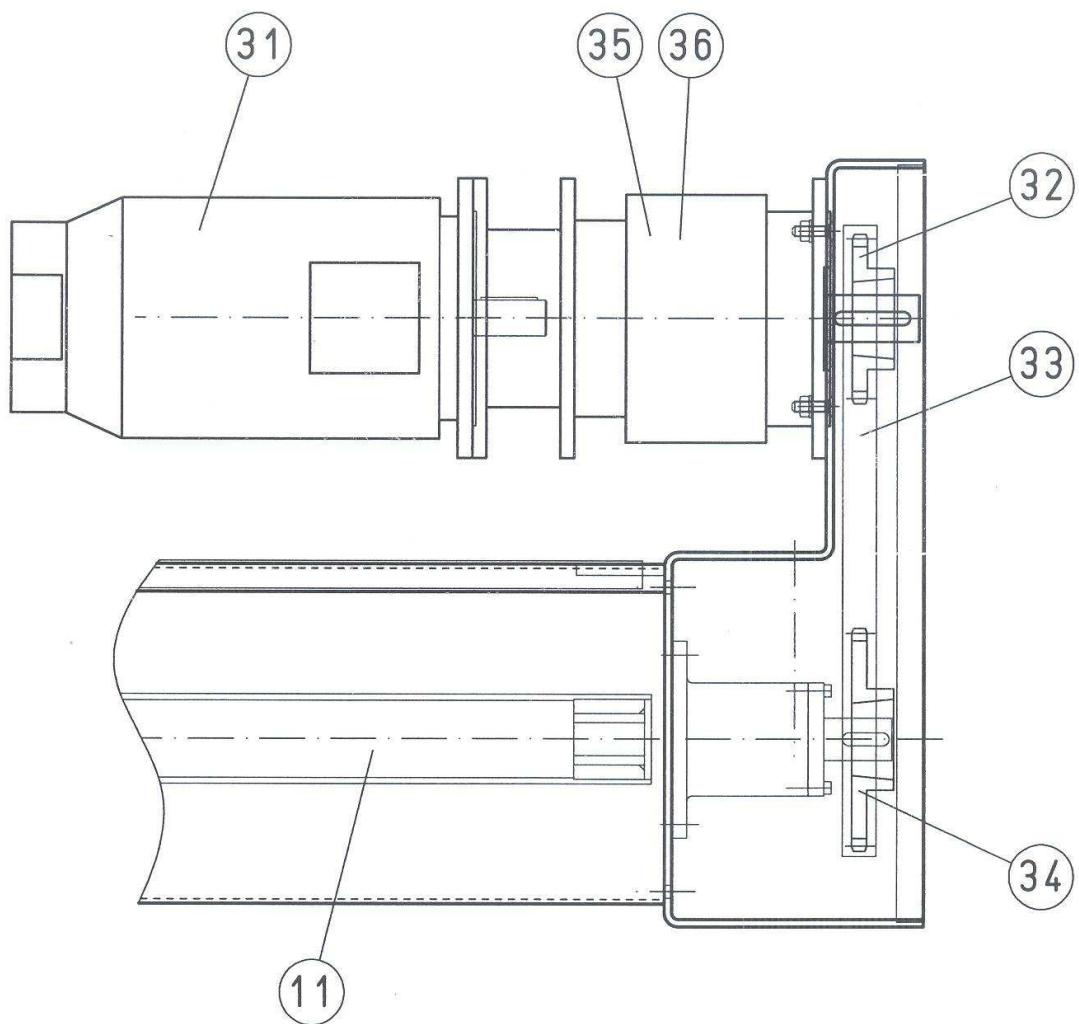




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MODENA ITALY**TABLE N° SRI-041-800-1**

JOB N° 2F11

ITEM 62CL1

CODE 12195

ORD.N° 121235

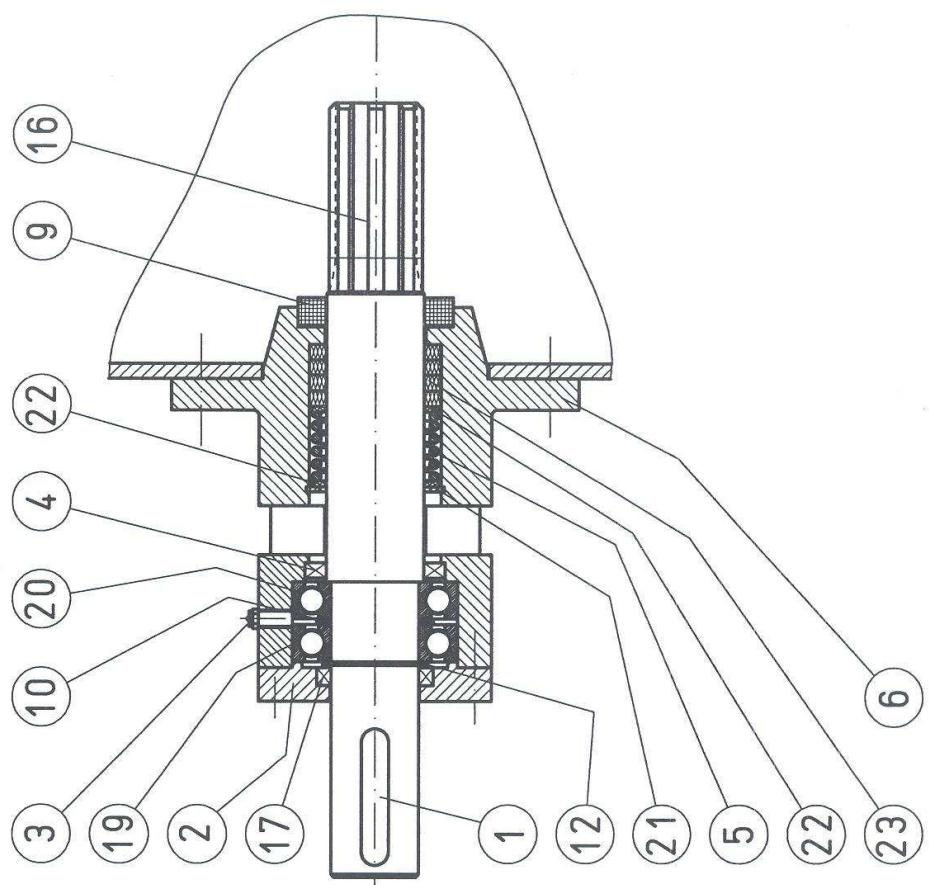
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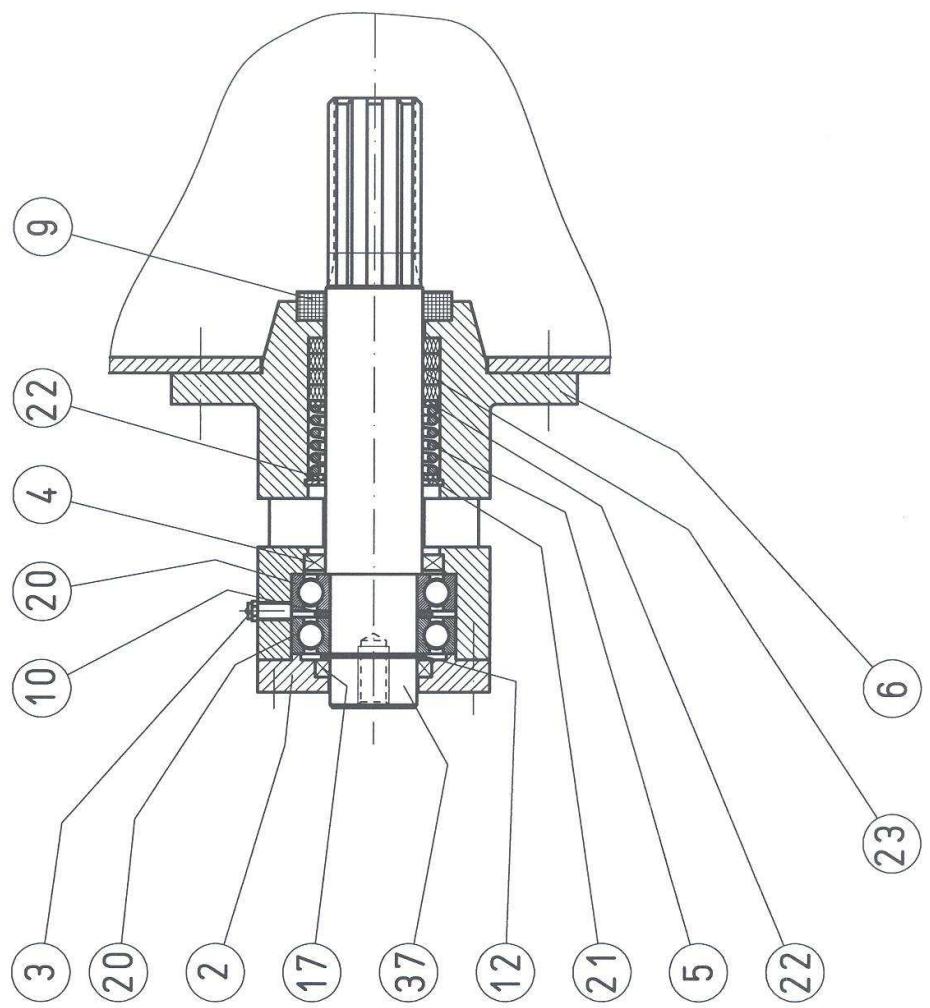
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2	SUPPORT CUP	2	400.623
3	LUBRICATOR	2	11.278
4	SEAL RING	2	11.378
5	HELICAL SPRING	2	122.839
6	SCREW SUPPORT	2	229.239
7	S.S. PROTECTION		
8	FELT		
9	RING	2	400.624
10	WASHER	2	400.627
11	SCREW SHAFT		
12	RING STOP	2	400.628
13	FELT		
14	INTERMEDIATE SUPPORT		
15	DRIVE HUB		
16	DRIVE SHAFT	1	400.604
17	SEAL RING	2	11.388
18	BUSHING		
19	THRUST BALL BEARING	1	400.625
20	BALL BEARING	3	400.626
21	RING STOP	2	16.438
22	WASHER	4	122.879
23	FELT	8	14.738
24	KEY		
25	CONVEYOR FRAME		
26	INTERMEDIATE SHAFT		
27	KEY		
28	SEAL RING		
29	FLIGHT		
30	SPACER		

DATE 01-08-2012

ISSUED BY CANE'

SHEET N° 1

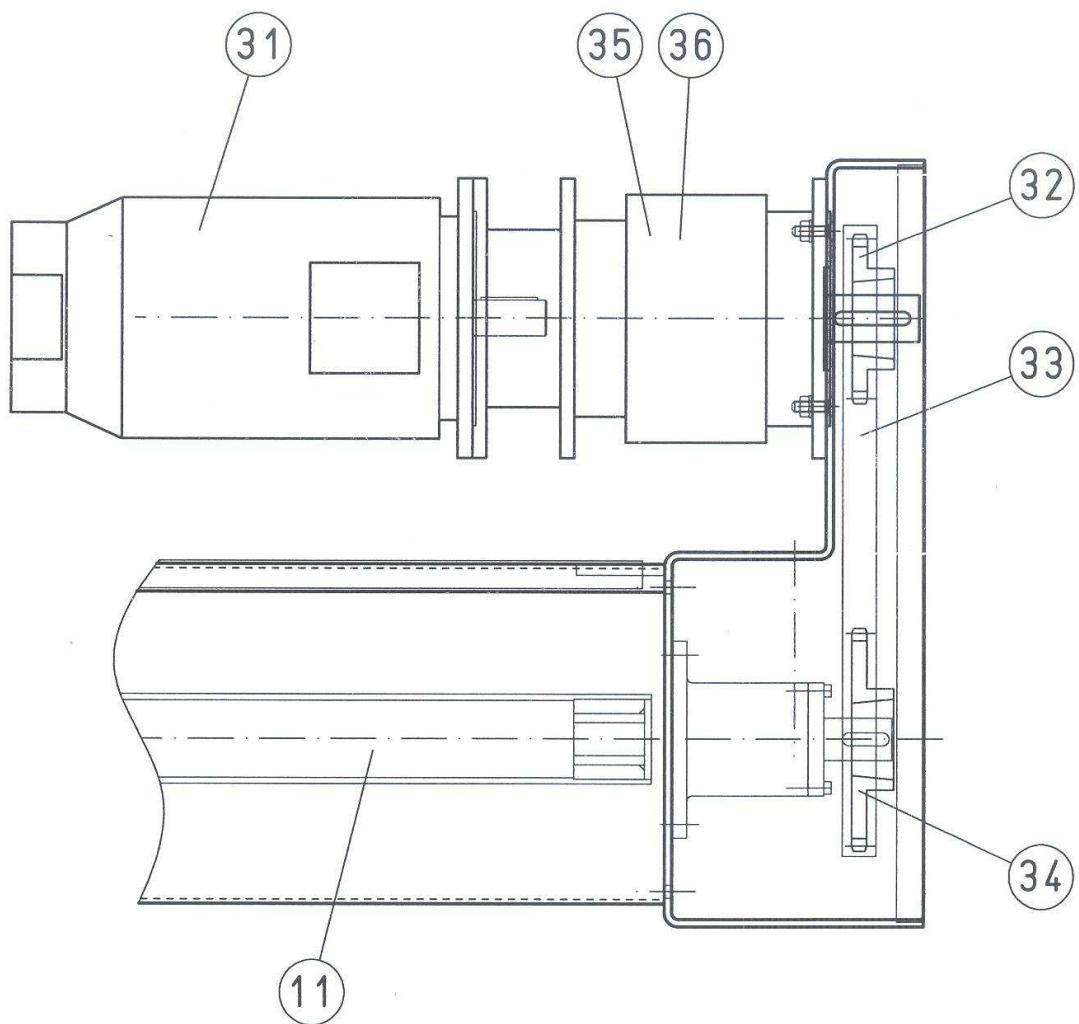




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MODENA ITALY**TABLE N° SRI-041-804-1**

JOB N° 2F11

ITEM 62CL6

CODE 12199

ORD.N° 121235

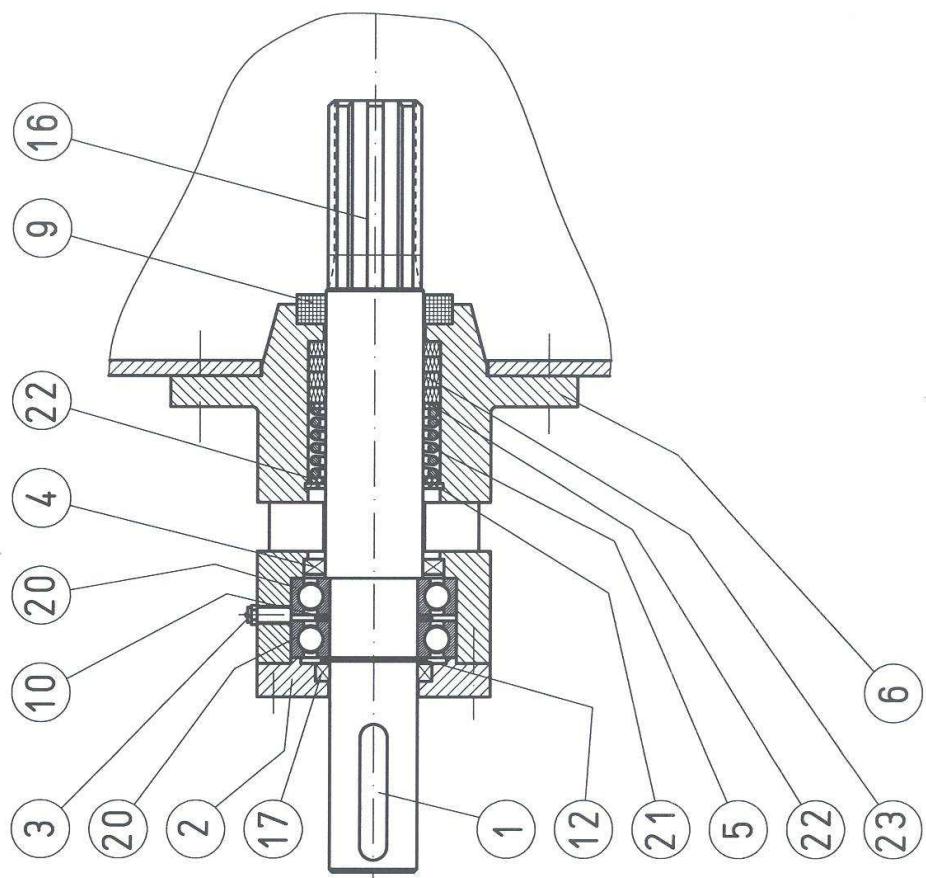
SCREW CONVEYOR MOD. CC 300/6,00

POS.	DESCRIPTION	Q.TY	CODE
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2	SUPPORT CUP	2	400.623
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4	SEAL RING	2	11.378
5	HELICAL SPRING	2	122.839
6	SCREW SUPPORT	2	229.239
7	S.S. PROTECTION		
8	FELT		
9	RING	2	400.624
10	WASHER	2	400.627
11	SCREW SHAFT		
12	RING STOP	2	400.628
13	FELT		
14	INTERMEDIATE SUPPORT		
15	DRIVE HUB		
16	DRIVE SHAFT	1	400.604
17	SEAL RING	2	11.388
18	BUSHING		
19	THRUST BALL BEARING	1	400.625
20	BALL BEARING	3	400.626
21	RING STOP	2	16.438
22	WASHER	4	122.879
23	FELT	8	14.738
24	KEY		
25	CONVEYOR FRAME		
26	INTERMEDIATE SHAFT		
27	KEY		
28	SEAL RING		
29	FLIGHT		
30	SPACER		

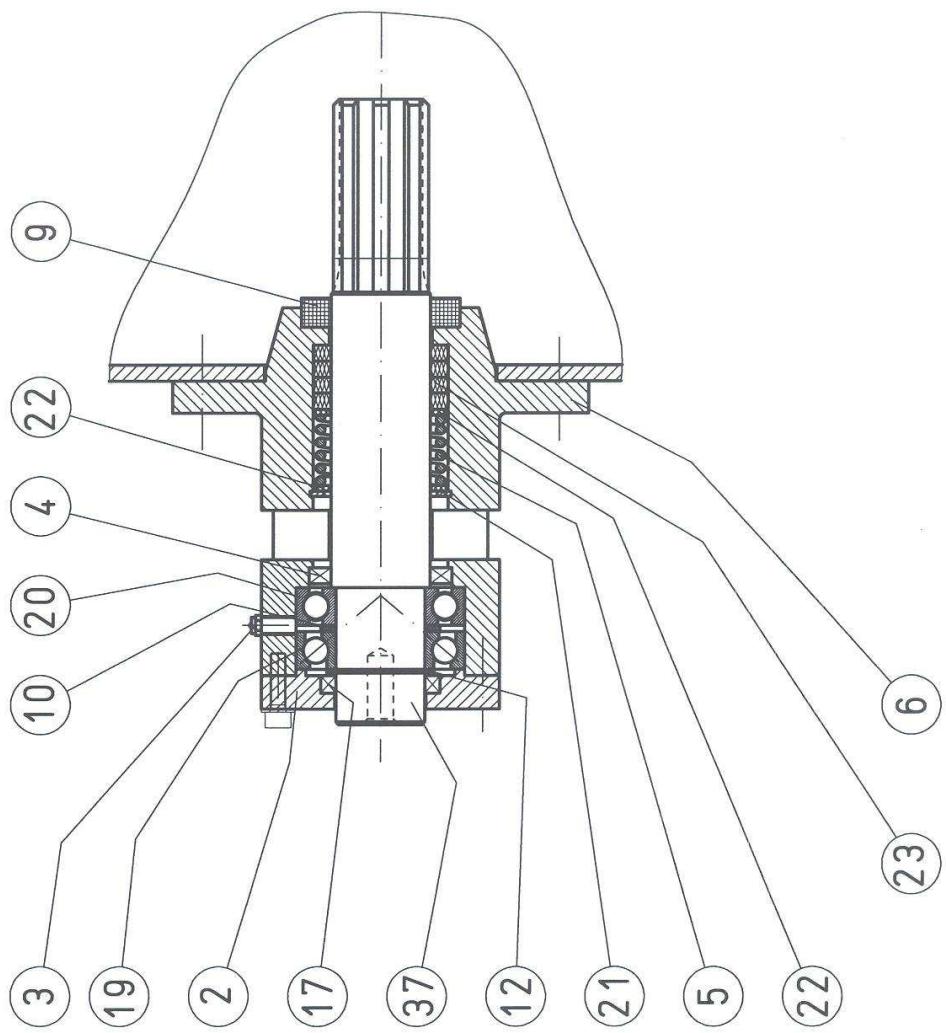
DATE 01-08-2012

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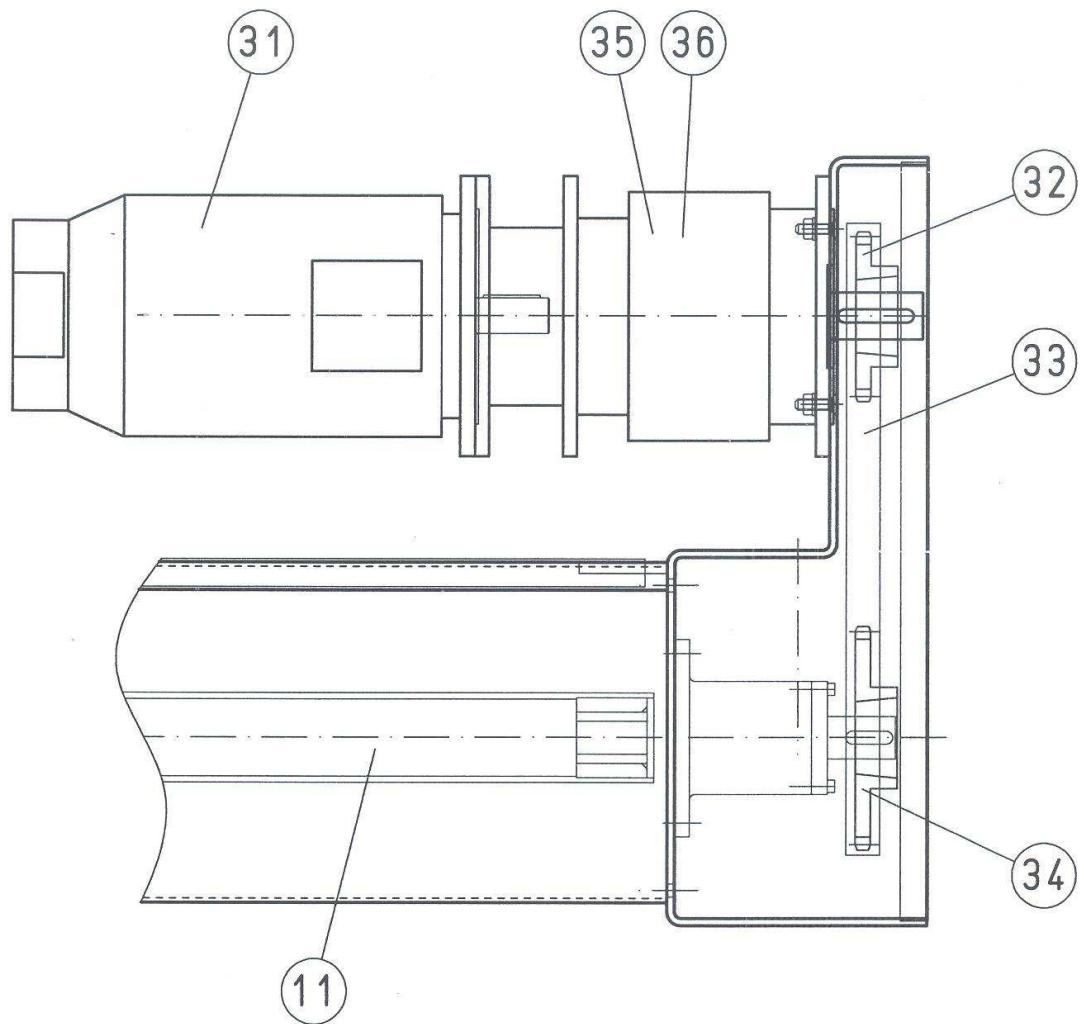
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MODENA ITALY**TABLE N° SRI-NPF80181**

JOB.N° 2F11 ITEM 64N1

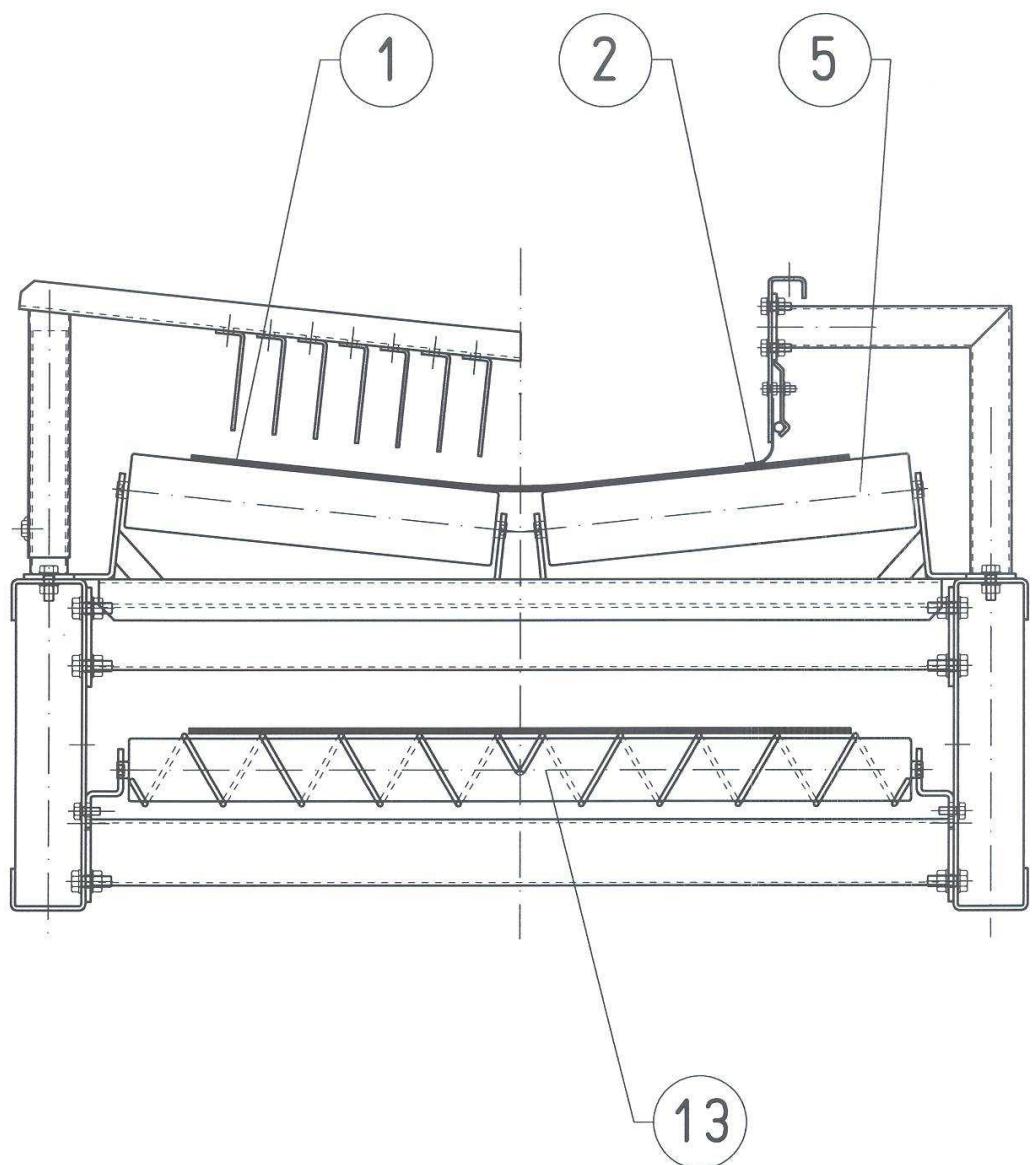
CODE 12193 ORD.N° 121235

CONVEYOR MOD. NPF800/15,40

POS.	DESCRIPTION	N°PCS	CODE
1	BELT	1	402.504
2	PROTECTION		
3	SIDE CARRYING IDLER (3 IDLER SET)		
4	CENTRAL CARRYING IDLER (3 IDLER SET)		
5	CARRYING IDLER (2 IDLER SET)	48	36.469
6	BEARING FOR DRIVE PULLEY	2	113.128
7	DRIVE PULLEY	1	
8	SPROCKET FOR BRUSH	1	106.069
9	CHAIN FOR BRUSH	1	203.369
10	SPROCKET FOR BRUSH	1	106.079
11	BEARING FOR BRUSH	2	21.678
12	BRUSH WITH SHAFT	1	402.508
13	RETURN IDLER	11	402.505
14	ELECTRIC MOTOR	1	402.506
15	SPEED REDUCER	1	402.507
16	SPROCKET		
17	CHAIN		
18	SPROCKET		
19	BEARING FOR TAIL PULLEY	2	110.978
20	TAIL PULLEY	1	
21	TAIL PULLEY (FOR BRUSH)		
22	VARIABLE SPEED DRIVE		
23	CHAIN TAKE-UP SPROCKET WITH BEARING	1	11.208
24	TAKE-UP PULLEY		
25	BEARING FOR TAKE-UP PULLEY		
26	HYDRAULIC PIPE	1	401.223
27	CILINDER GASKETS SET	1	402.475
28	CARRIAGE BEARING		
29	CHAIN TAKE-UP WHEEL BEARINGS	1	400.326
30	PLOW BLADE (COUPLE)	1+1	402.509
DATE	26-10-2012	ISSUED BY	CANE'
		PAGE	N° 1

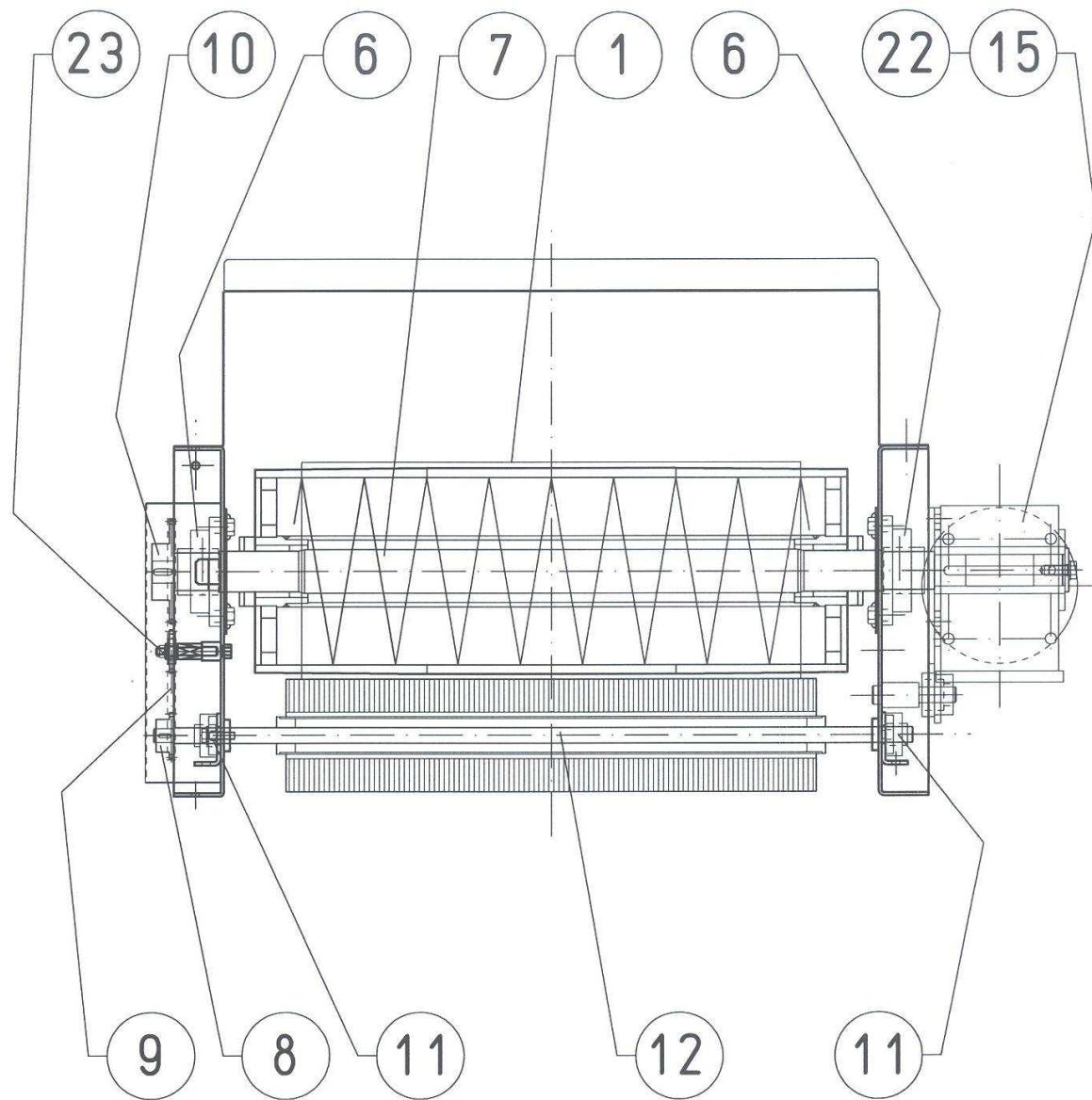
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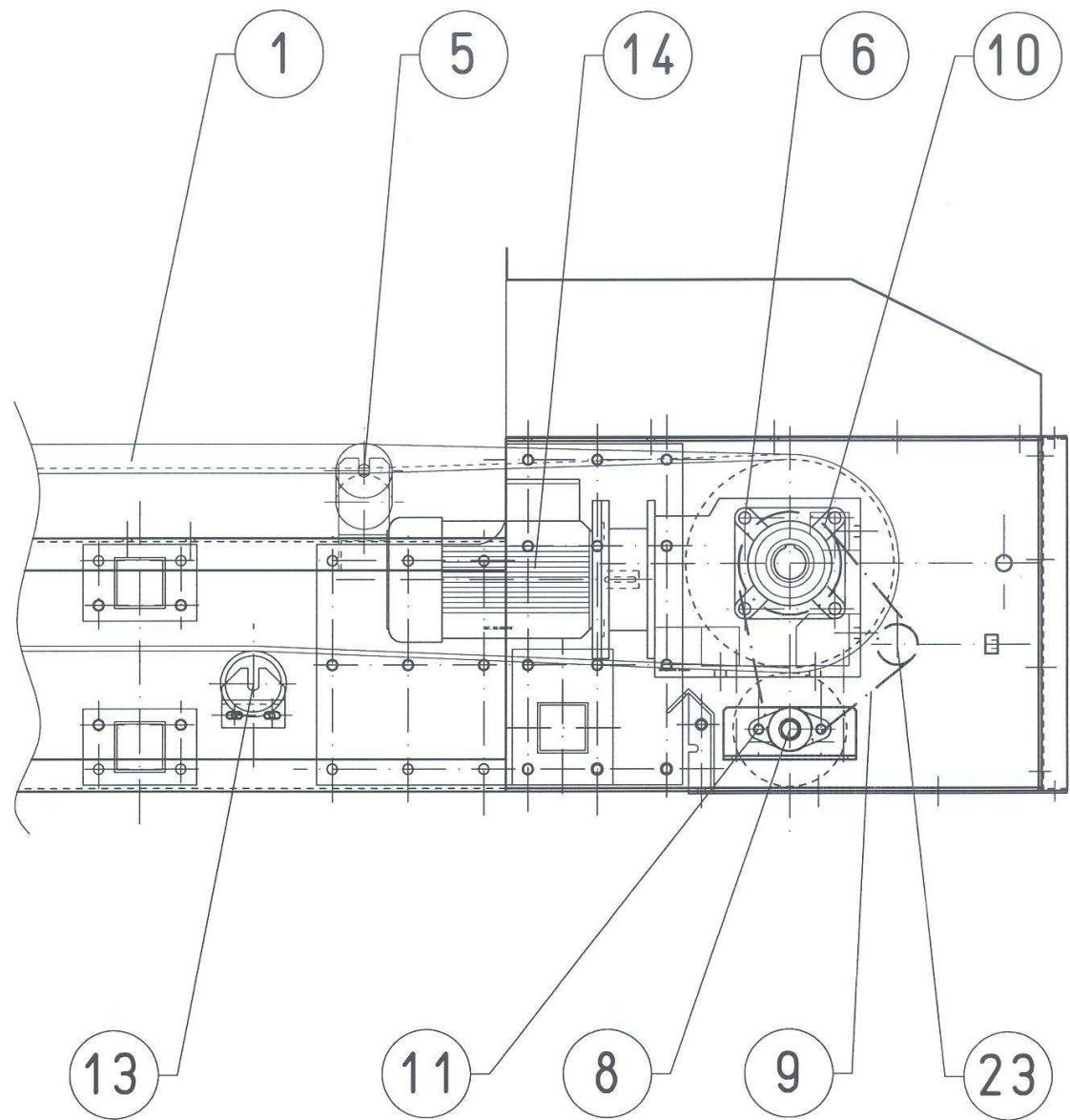
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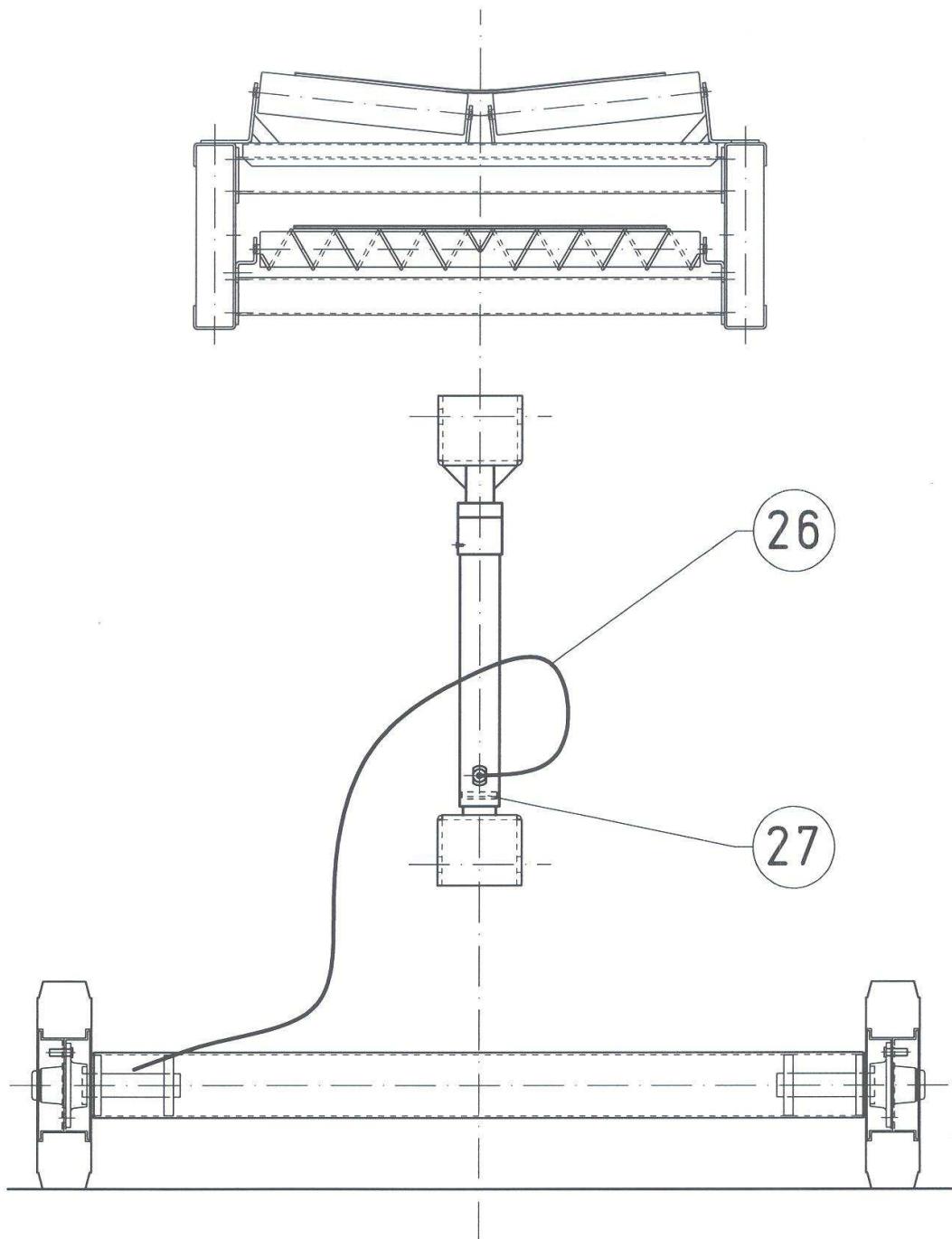
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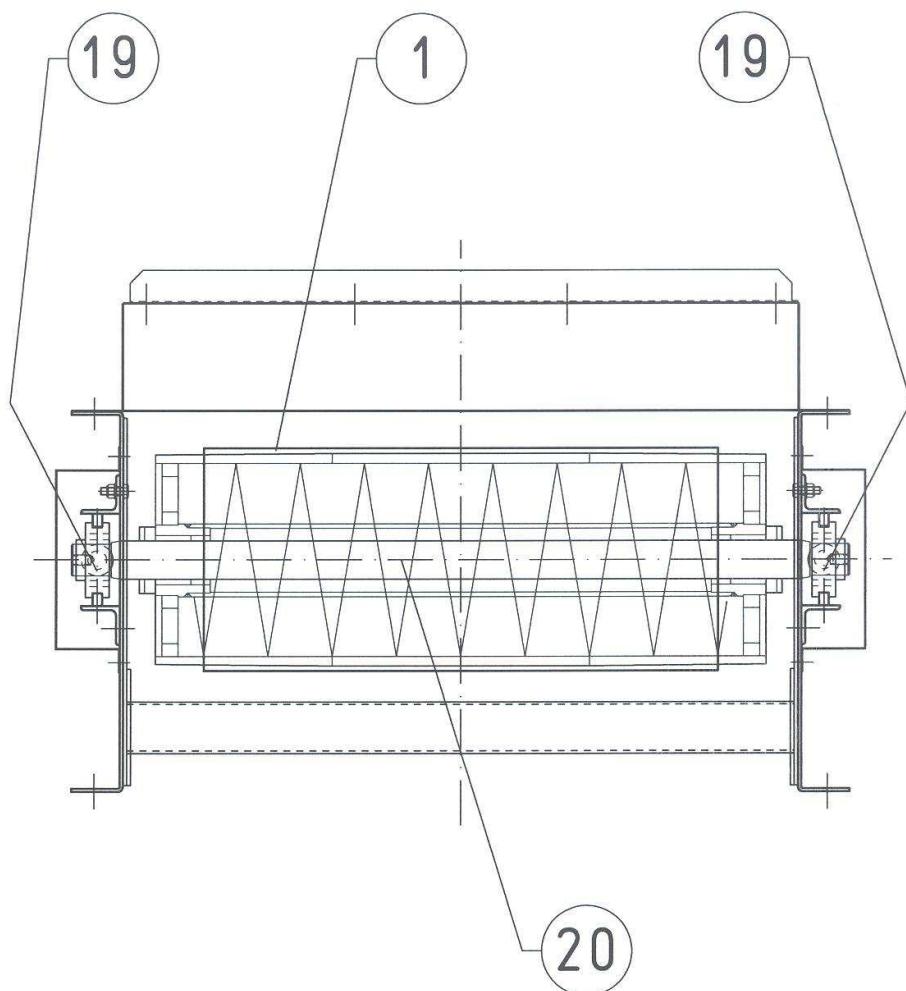
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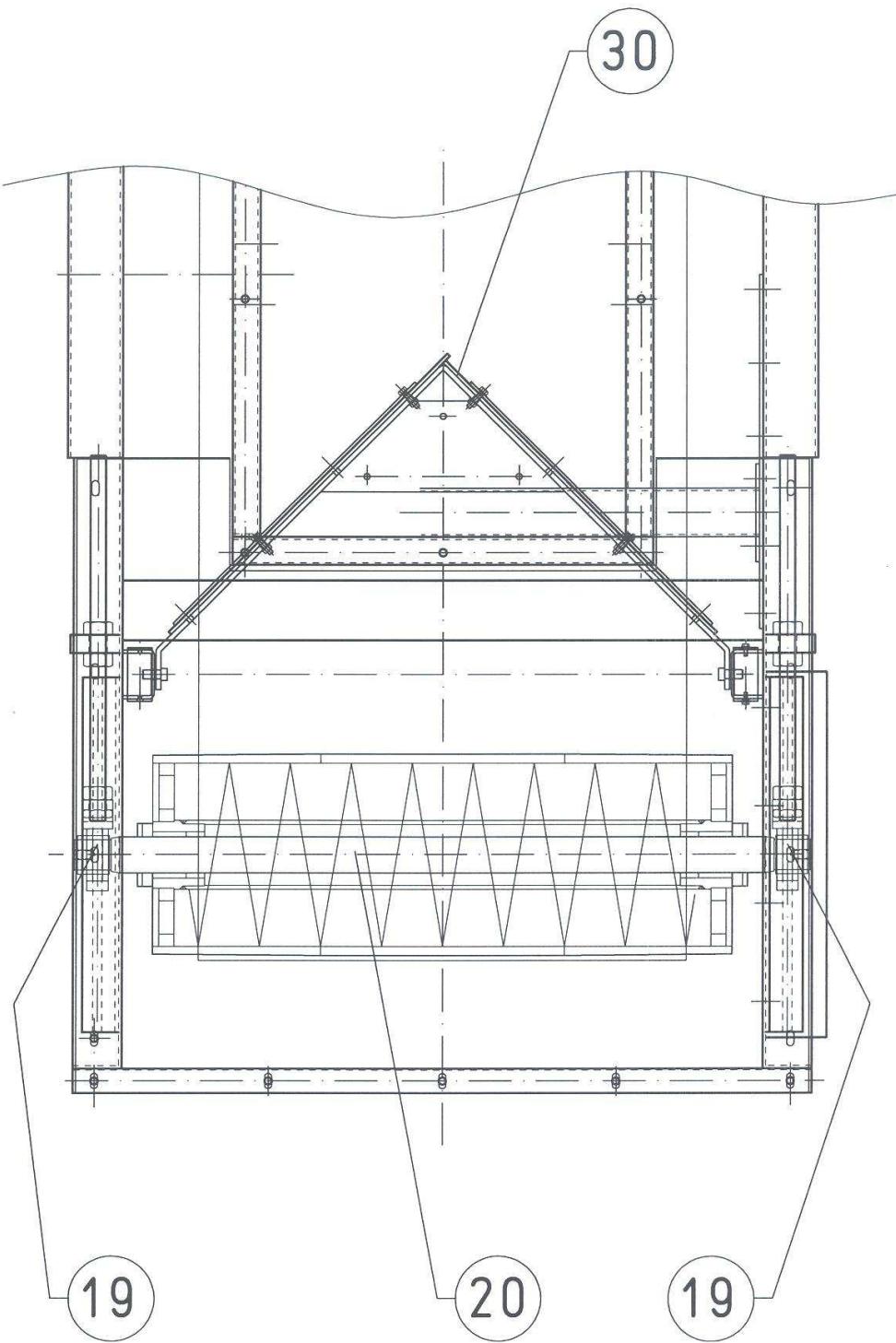
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MODENA ITALYTABLE N° **SRI-NPF3081**

JOB.N° 2F11

ITEM **65N1**

CODE 12194

ORD.N° 121235

BELT CONVEYOR MOD. NPF300/10,35

POS.	DESCRIPTION	N°PCS	CODE
1	BELT	1	401.029
2	BOARD FOR SIDE SKIRT		
3	SIDE CARRYING IDLER (3 IDLER SET)		
4	CENTRAL CARRYING IDLER (3 IDLER SET)		
5	CARRYING IDLER (2 IDLER SET)		
6	BEARING FOR DRIVE PULLEY	2	11.108
7	DRIVE PULLEY	1	
8	SPROCKET FOR BRUSH		
9	CHAIN FOR BRUSH		
10	SPROCKET FOR BRUSH		
11	BEARING FOR BRUSH		
12	BRUSH WITH SHAFT		
13	RETURN IDLER	7	400.165
14	ELECTRIC MOTOR	1	116.378
15	SPEED REDUCER	1	401.030
16	SPROCKET		
17	CHAIN		
18	SPROCKET		
19	BEARING FOR TAIL PULLEY	2	135.969
20	TAIL PULLEY	1	
21	TAIL PULLEY (FOR BRUSH)		
22	VARIABLE SPEED DRIVE		
23	CHAIN TAKE-UP SPROCKET WITH BEARING		
24	TAKE-UP PULLEY		
25	SUPPORT FOR TAKE-UP PULLEY		
26	BEARING FOR TAKE-UP PULLEY	2	16.358
27	VIBRATION DAMPING ROD		
28	STRIP SET FOR EXTERNAL SCRAPER	1	400.170
29	STRIP SET FOR INTERNAL SCRAPER	1	400.171
30			

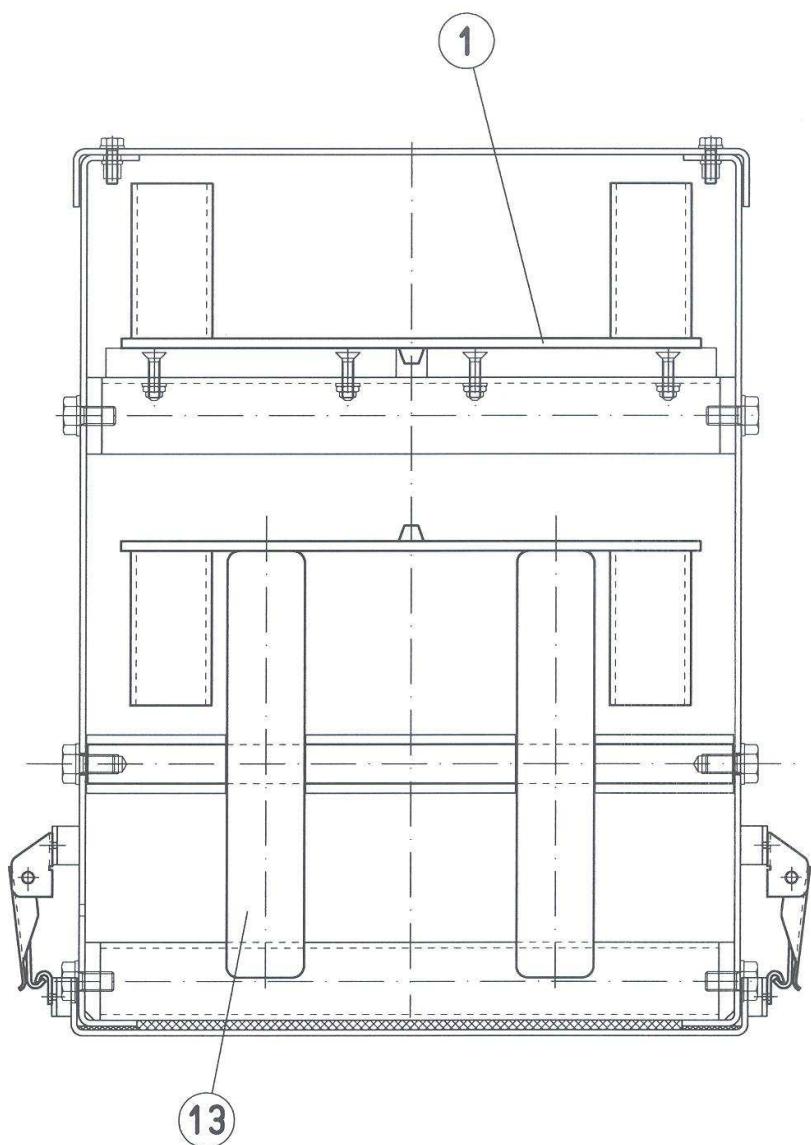
DATE 01-08-2012

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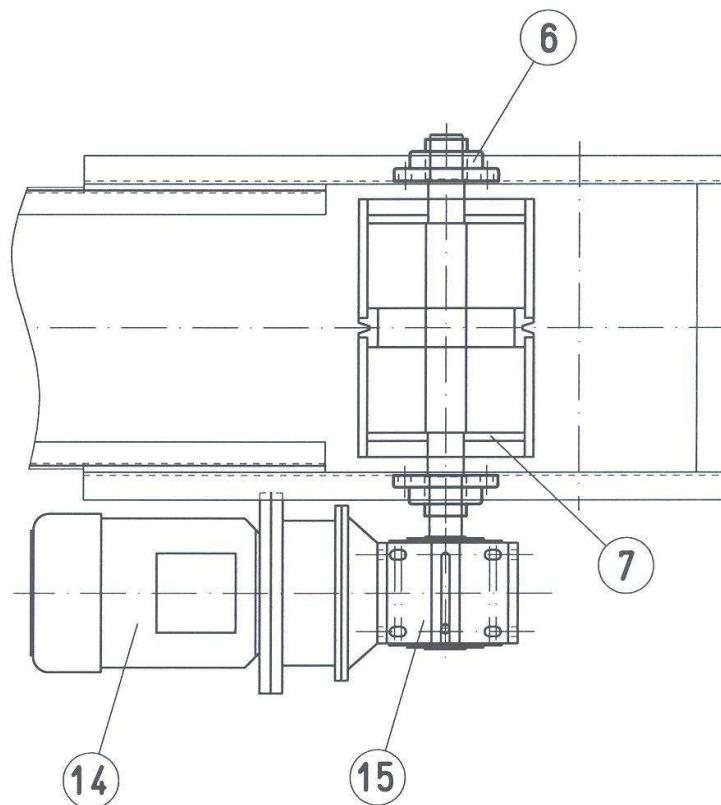
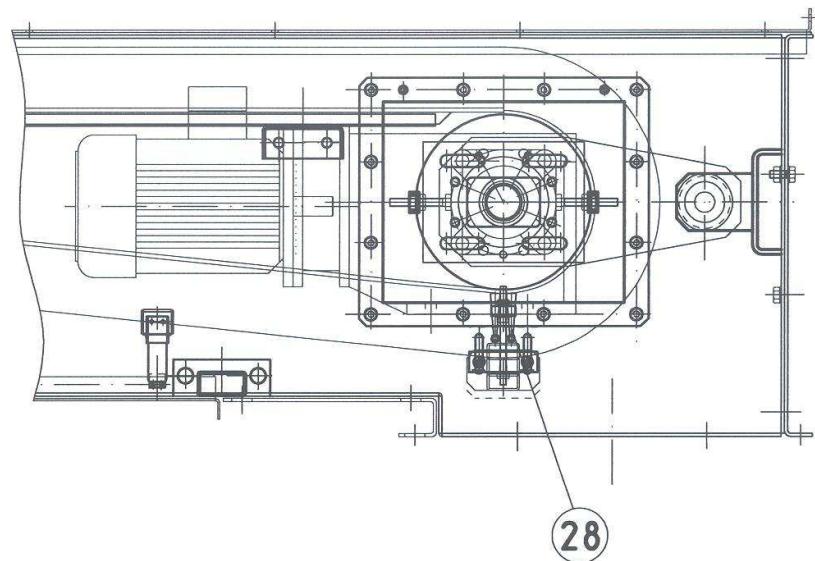
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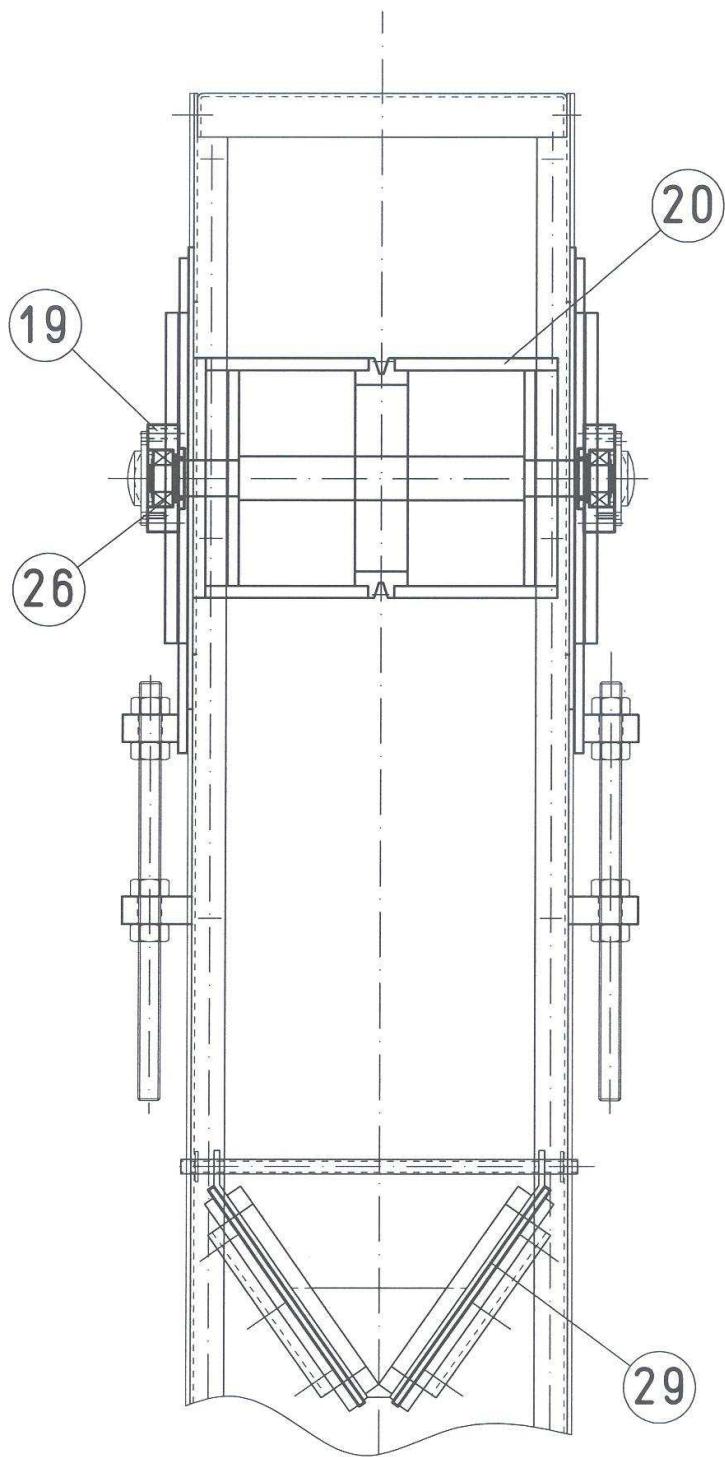
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MANUAL FOR ERECTION AND MAINTENANCE

SCREW CONVEYOR

Manufacturer: BARBIERI COSTRUZIONI MECCANICHE S.r.l.
via Morane 264 - 41125 Modena
tel. 059 - 300018 - 300023
fax 059 - 300095
e-mail info@barbieri-cm.it
web www.barbieri-cm.it

Client: DESMET BALLESTRA S.p.A.
Via P. Portaluppi, 17
20138 MILANO

Order n° 121235 dated 28-05-2012

Job n° 2F11

MACHINE SERIAL	DRAWING	ITEM	MANUF. YEAR
12195	041-800-000	62CL1	2012
12196	041-801-000	62CL2	2012
12197	041-802-000	62CL3	2012
12198	041-803-000	62CL4	2012
12199	041-804-000	62CL6	2012

INFORMATION

- 1.1.3 - Notice to installer
- 1.1.4 - Purpose of machine
 - Improper use
 - Noise level
- 1.1.5 - General characteristics
- 1.1.6 - Technical data
- 1.1.7 - Oils chart
- 1.1.8 - Supplied with the machine
- 1.1.9 - Technical assistance and maintenance
- 1.1.10 - Keep the manual

SAFETY

- 1.2.1 - Safety norms
- 1.2.2 - Introduction
- 1.2.6 - List of safety device on machine
- 1.2.7 - Notes

INSTALLATION

- 1.3.1 - Lifting and transport
 - Storage
- 1.3.2 - Overall dimension and foundation
 - Cleaning
 - Packing disposal
- 1.3.3 - Machine indicator plates
- 1.3.4 - Erection marks on machine

OPERATION

- 2.2.1 - Erection
- 2.2.2 - Electric connection
 - General check to be carried out before turning the machine on
 - Oil supply in the machine
- 2.2.3 - Preliminary operation
- 2.2.4 - Start-up
- 2.2.5 - Starting with material
- 2.2.6 - Operation

PERIODICAL MAINTENANCE

- 3.1.1 - Periodical maintenance
 - Maintenance
- 3.1.7 - Trouble shooting
- 3.1.8 - Demolition and waste disposal
- 3.1.9 - Set the machine temporarily out of service

1.1.3 NOTICE TO INSTALLER OR USER

This machine cannot be used alone, but only connected and bolted to other machine. Never use the conveyor with bare inlet or outlet openings to avoid any possibility of access to rotating or dangerous parts; a further planning should be carried by the user to make the whole arrangement be in compliance with the safety rules. It will be care of client or user arrange for setting protection mechanical and electrical (safety barrier, screws, switches etc.) related to dangerous points after survey when the assembling will be at the end.

IMPORTANT

Upon the delivery of the machine, the consumer must make sure that all the devices indicated in the paragraph of the safety manual are present and working correctly. Furthermore, he must mount in conformity with the instructions indicated those devices which are not mounted at the time of delivery to facilitate transport.

BE CAREFUL

It is forbidden to operate this equipment before the equipment or the machine where this will be built in be declared in compliance to machine directive 2006/42/CE and subsequent modifications.

1.1.4 PURPOSE OF MACHINE

This equipment has been designed to be used in industries to carry product in quantity and quality as stated in technical data.

Using it with any other material should be considered improper and forbidden. See what stated in chapter 1.1.3.

IMPROPER USE

Improper uses, which may place operators in danger and for which the company declines all responsibility for injury or damage, are:

- use of the machine by operators who have not read and UNDERSTOOD this manual;
- use of the plant by unqualified operators;
- failure to maintain or inadequate maintenance and/or control of the plant;
- presence of the operator outside the walkway surfaces;
- walking on the belts, even if not in operation;
- filling up with materials of any kind with the plant in operation;
- operation of the plant without one or more safety devices (housings, limit switches, emergency buttons, parapets, etc.) installed.
- tampering with the safety devices.
- use of the plant for purposes other than those for which it was designed and constructed.
- see what stated in chapter 1.1.3.

SPECIFIC SAFETY PRECAUTIONS

ELECTRICAL RISKS

- If work has to be done on live electrical parts, first disconnect the power supply, then insulate yourself from the ground by means of insulating clothing. Never work with wet hands and/or feet. There are many risks involved.
- Never allow wires to block passage ways and/or to be placed close to heat sources or corrosive substances.
- Check the insulation frequently and report any faults.
- Never remove the safety guards until the power supply has been disconnected.

HYDRAULIC/PNEUMATIC CIRCUIT

Protect your body when carrying out checks for leaks on the hydraulic/pneumatic circuit.

RISKS

During the working time, the operator must NEVER put hands or use tools in the working area.

NOISE LEVEL

When designing this machine, the company has adopted technical solutions intended to keep the level of noise generated as low as possible lower than 70 dB. In spite of this, for reasons not directly linked to its construction but to the features of the plant in which it is included, high noise levels may be reached during normal conditions of use.

Normally, the operator's working position is separated from the machine, and the constant presence of an operative is not required.

CAUTION: Daily personal exposure in excess of 85 dB(A) may lead to loss of hearing, which must be prevented using soundproof ear plugs and muffs.

HEAT RISK

- In case during process it is conveyed hot material dangerous for contact are necessary signals or protective barrier a careful information to the workers about heat danger should be done.

1.1.5 GENERAL CHARACTERISTICS

The screw conveyor consists of a steel pipe or trough with inside a rotating shaft with a spiral to convey the loaded product. The shaft is supported at its ends by bearings and supports.

Long screw conveyor are supplied in more bolted frames, with inside one or more intermediate supports electrical equipment excluded.

The conveyor drive unit is located at one end.

1.1.6 TECHNICAL DATA

SCREW CONVEYOR ITEM (code)

TYPE : PIPE

Length : mt.
Screw diam. : mm.
Screw RPM :
Product :
Capacity : ... mc/h
Motor : ... Kw. V. Hz.
Weight : Kg.

1.1.7 OILS CHART

BEARINGS

Use lithium grease (it guarantee the a broad service conditions)
ESSO Beacon 2

SPEED REDUCER

Use oil ISO Viscosity 220
ESSO Spartan EP 220

TRANSMISSION CHAIN

Use oil viscosity ISO VG 150 (for normal use)
For special operating conditions consult the producer.

MECHANICAL VARIATOR

(Disc type in oil bath)
Use oil type "ESSO" A.T.F. Dexron
Oil with viscosity 160
Shell DONAX TA

BRONZE BUSHING OR SLIDING PARTS

Use lithium grease

Equivalent oils or grease of different brands can be used.

Require security card from oil producer to be informed about specific risk.

1.1.8 SUPPLIED WITH THE MACHINE

Instructions manual for erection operating and maintenance.

Test certificate (together with the instructions manual).

1.1.9 TECHNICAL ASSISTANCE AND MAINTENANCE

For any information or request for repair work contact:

BARBIERI COSTRUZIONI MECCANICHE S.R.L.
Via Morane n°264
41125 MODENA
TEL. 059 / 300018 - 300023
FAX 059 / 300095

We will provide all technical information or arrange for technical assistance on field.

1.1.10 WHERE TO KEEP MACHINE OPERATING MANUAL

Keep this manual in safe place since it must accompany the machine throughout its long operating life.

1.2.1 SAFETY NORMS

In preparing this chapter concerning safety, we have borne in mind the accident prevention laws in force and:

- ECC Directive n. 2006/42/CE and amendments
To try to harmonise the member states' norms concerning machine-tools.

EN12100-1 / 2

Safety of machinery

Basic concepts - General principles for design.

Warning !!!

Strictly follow the safety norms highlighted below to ensure the correct use of the machine as regards the electrical fixtures and to prevent electrocutions, wounds, explosions and the outbreak of fires.

1.2.2 SAFETY

INTRODUCTION

- Never start any repairs and/or maintenance unless the plant is switched off and the measures necessary to prevent it being started up accidentally during the maintenance work have been taken.
- Never start up the motors if staff are doing maintenance work on the machine.

There are two possible maintenance in progress situations:

extraordinary maintenance, during which the entire plant is shut down for reasons not directly linked to the plant's production process, but to allow operations such as cleaning, painting, etc.;

routine maintenance, during which the machines are activated in manual mode for operations such as adjustments, greasing, belt tensioning, etc.

To assure that hazardous situations do not arise, unless otherwise specified all maintenance operations should be carried out in the following conditions:

- warning that maintenance is in progress on the machine placed in a clearly visible position on the plant control panel;
- operating staff informed in advance;
- user control levers and/or switches turned to OFF/0;
- master switch on control panel turned off;
- plant operating in "local" mode, and control panel keys removed and consigned to the plant maintenance foreman, in order to prevent accidental start-up.

Depending on the work to be carried out, wear protective clothing such as:

safety helmet, sound-proof ear guards, safety goggles, dust mask, protective gloves, safety shoes, etc.

1.2.6 LIST OF SAFETY DEVICE ON SCREW CONVEYOR

1. Protection carter on transmission
2. Bolted inspection doors
3. Protection carter of speed sensors (if supplied)
4. Security switch on inspection doors with quick opening device (if supplied)
5. Bolted cover on trough
6. See chapter 1.1.3

DEVICE TO BE ASSEMBLED BY INSTALLER OR USER

- Protection panels depending from distance of dangerous point.
- Emergency push button and key switch for safety during maintenance.

1.2.7 NOTES

This chapter outlining the safety devices and norms was drawn up bearing in mind the normal use of the machine as stated in the chapter on the use of the machine and the adequate preparation of the operators as regards the specific risks linked to the operation of the machine.

If the machine is not used according to instruction given in the "PURPOSE OF MACHINE" chapter in this manual, the manufacturer is not responsible for any damage caused to people and things.

Furthermore, the manufacturer is not responsible for any damage to people and things resulting from the non-compliance with the following warnings:

- a) adopt all the necessary precautions during the calibration, part replacement, cleaning, reparation or maintenance operations prevent someone else from turning the machine on.
- b) do not tamper with the safety devices and guards on the machine.
- c) do not remove any of the safety devices and guards on the machine.
- d) always make sure that the safety devices and guards have been remounted after their temporary removal for technical reasons ordered by the boss.

1.3.1 LIFTING AND TRANSPORT

Attention: the machine must only be shifted by skilled personnel (sling, trolley or crane operators, etc.) with lifting equipment (cranes, lifttruck, etc.) of suitable size.

The lifting and transport shall take place through anchorage by means of hooks to the eyebolt on the machine sides.

The machine must be hoisted using four steel cables with hooks of suitable size.

See drawings for lifting points (if supplied).

STORAGE

During storage, the machine must be kept in a dry and covered place.

Electric equipment must be protected from dampness. Ambient temperature should be between - 10 and + 55°C and relative humidity is lower than 95% without condensation.

1.3.2 OVERALL DIMENSIONS AND FOUNDATIONS

See machine drawing for number, size, and position of anchor bolts, check the correct connection and tightening of machine to foundation.

CLEANING

Before starting the machine, wipe away all protective oil from painted surfaces using alkaloid detergents such as oil of turpentine or petroleum naphtha.

NOTE: These liquids must be used on a cloth and not sprayed.

PACKING DISPOSAL

Pull out nails from wooden boards forming packing tops.

Dispose of wood, cardboard, nylon bags and nails according to regulations in force.

1.3.3 MACHINE INDICATOR PLATES

SAFETY, GUIDANCE AND NOTICE SIGNS

On the machine or plant are settled plates concerning "WARNING" or danger situations. It is compulsory by operators be informed where the plates are and that they are readable. Clean them with clean clothes, avoiding use of solvents.

Fig. 1)

SERIAL PLATE ("CE" IF SUPPLIED)

This sign is located on the right-hand side of the machine head, identifying the data provided by the regulations in force.



"**ELECTRIC CURRENT**" sign, black on yellow, located on the electric box (if supplied).

Fig. 2)

"**CARTER**" dangerous gear, located on transmission or revolving objects.



1.3.4 ERECTION MARKS ON MACHINE

See general drawing for erection.

2.2.1 INSTALLATION

While transporting the machine to the working place, make sure it is handled with care and particularly the geared motor and the idle support areas in order to avoid serious damages in starting the equipment. During transport and installation of the conveyor take care that it does not undergo very strong bending that may cause excessive deformation on frame and spiral with irreparable damages.

While lifting the conveyor, do not clutch at the spiral that may lose its balance and cause a faulty operation by increasing the noise level of the machine and by decreasing the life of the bearings.

To lift the machine it is necessary to grasp it at the two ends, near the flanges on which the spiral supports are secured and in correspondence of the different reinforcement cross members of the box.

While assembling the parts of the machines it is necessary to carefully follow the numbers written on the identification plate placed on the machine.

After having located the conveyor in correspondence of the charging and discharging ports and after having checked that such ports are perfectly in parallel to the ground, put a suitable gasket between the two flanges, in order to get a perfect seal between the two parts. When tightening the connecting bolts between the ports, it will be necessary to tighten the screws evenly, by starting alternately from one screw to the one sideways opposed. If required, provide additional brackets in order to avoid any kind of oscillation or bending of the machine.

If the conveyor is supplied in two or more sections when erect be careful that they are in line using screw registration on supports.

ASSEMBLING FRAMES SHIPPED SEPARATELY

Insert the spiral shaft outstanding one part of conveyor in the other conveyor frame. Approaching the frames insert the intermediate support shaft duly lubricated with grease inside the hub of the spiral shaft. (In tubular screw open the inspection door to facilitate the operation).

Bolt the flanges of the conveyor frames.

Keep attention that the spiral pitch be kept at best continuos although the 2 spirals are separate from intermediate support.

IMPORTANT:

Check the various frame alignment, the correct position is obtained when it is possible to rotate the shaft with spiral by hand.

This assembly allow the right operation of the external and intermediate bearings without overheating or premature wear.

CONVEYOR WITH BOLTED SHAFT

Operation as previously described, align the holes in the screw shaft and in the pin, then insert the bolts to connect them.

2.2.2 ELECTRIC CONNECTION

First of all, verify that the operation voltage of the electric installation of the machine corresponds to the voltage used in the factory.

Connect the machine power cable to electric panel provided with magnetothermal switch suitable the motor power.

Connect earth wire (yellow/green) after making sure that earth connections are executed in compliance with regulations in force.

To verify the correct connection of the machine to the mains, act as follows:

- Apply voltage to the panel through the main switch.
- Start the motor trough the push button.

The rotation of the motor must take place according to the direction indicated by the arrow and which is printed on the flywheels housing. Otherwise, change a polarity of the connection to the mains.

GENERAL CHECK TO BE CARRIED OUT BEFORE TURNING THE MACHINE ON

Make sure that the safety devices and damaged parts are working correctly.

Make sure that the moving parts are not hindered in their movements.

Make sure that there are no damaged parts and that all parts have been mounted and are working correctly.

Any damaged safety devices or parts must be repaired or replaced.

OIL SUPPLY IN THE MACHINE

The machine is supplied with oil in reducer.

If necessary to provide for the supply or add to level before starting.

Introduce through the plug the oil stated in table, in any case.

The level can be checked through the transparent pilot light.

2.2.3 PRELIMINARIES OPERATION AT STARTING

Carefully inspect the inside part of the screw, making sure that there are no foreign object that may damage the screw or the receiving machine. Inspect the charging and discharging point and check if there are obstacles to the free passage of the material.

2.2.4 STARTING

Start the empty machine in order to verify the perfect working of all components. Then check the direction of rotation of the spiral.

If the rotation is wrong, stop the conveyor, disconnect the power and reverse the polarity of the motor connection. Start again and verify the good running of the machine components.

2.2.5 STARTING WITH PRODUCT

If the machine run properly and no defects are shown, can be fed with the product, taking care that the receiving machine is working. When the screw is running with product, stop the conveyor and start fully loaded in order to verify the worse working conditions. In this way the motor at starting and in the normal working conditions can be checked.

2.2.6 OPERATION

When more conveyor fully loaded are working in line check that the receiving one is running faster than the feeding one.

When the top cover or the bolted inspection doors are open be sure that the conveyor is stop and take actions to avoid that it is casually started.

The machine must be used in such a way that the operator (or any other person or animal) cannot enter through the inlet and outlet holes.

Never use the conveyor with bare inlet or outlet holes; these holes must always be fastened respectively to the feeding and receiving machine, to avoid any possibility of access to the inside rotating parts; any use with bare holes must be planned by the user in compliance with the safety rules (safety barriers and screens, test of the safety distances for the limbs etc.).

Any improper use and any arbitrary modification to the machine will relieve the manufacturer from his liabilities for any damage and will cause the expiration of the guarantee.

3.1.1 PERIODICAL MAINTENANCE OPERATIONS

The machine must be submitted to inspection and maintenance to safeguard technical, productive and safety conditions provided by the manufacturer.

Maintenance operations must be performed by technical or maintenance personnel only. Tampering by non-skilled workers can compromise machine operation and relieves manufacturer from every liability.

WARNING: before carrying out maintenance, cut off the power supply to the machine by means of the key switch.

DAILY:

It is advisable to carry daily a careful visual inspection (before starting) of machinery to be sure the are not loss or irregularity.

Check oil loss, bolt loose, seals wearied, product deposits etc.

WEEKLY:

- Check the oil level in speed reducer.
- Lubricate intermediate and end supports.
- Check felt dust protection efficiency and tighten or replace if necessary.
- Check transmission.

ELECTRIC SYSTEM

Yearly inspect electric insulation of the electric system and protection conductor (earth) by an authorised electrician.

Tampering by non-authorised personnel can compromise machine operation and relieves manufacturer form every liability.

WEAR PARTS

Steel screw, intermediate supports, end bearings and seals are product subject to wear and their replacement need to be scheduled in advance.

MAINTENANCE

IMPORTANT

To avoid incidents during inspection of moving part it is required to stop the conveyor and avoid that it is restarted without authorisation.

SAFETY

Remember that use and maintenance of screw conveyors may be dangerous if safety principles are not followed.

If safety distances cannot be observed (ex. for maintenance purpose), remember that all rotating parts can be dangerous, mainly drive pulley and tail pulley.

All maintenance actions should be carried out after stopping the conveyor (including belt tensioning and belt training).

Before starting the conveyor again, be sure that nobody is in danger.

MAINTENANCE INTERVALS

The inspection and maintenance intervals depend on the actual operating conditions (loads, starting frequency, etc.) and ambient conditions (dust, humidity, etc.).

It is advisable to check the conveyor carefully in the first working period, then eventually correct and adapt the following general guidelines.

FRAME

The paint on the outside part of the worm screw may be damaged during transport and set up of the machine and the plate of the frame may get rusty. Re-paint the areas following the instructions suggested by the paint producer.

After the first 50 hours of operation, carefully check if the bolts are perfectly tight because they may unloose due to the normal settling. This operation has to be repeated from time to time in order to avoid any damage to the screw.

At the end of each week, check if the charging ports and particularly the discharging port are completely free.

END SUPPORTS

The re-lubrication is provided for the idle and drive supports in order to bring new lubricant to the bearings and remove the old one. The re-lubrication has to be made every 50 or 60 working hours and for this operation we recommend top quality grease for bearings (see table of recommended grease type). Replace the seals if the product flow from the supports.

INTERMEDIATE SUPPORT

The intermediate support is the support that has to be more frequently checked, as the bushing is subject to fast wear if not duly lubricated.

Check the wear of the external seal rings and replace them if wearied.

To check the wear of the bushing, it is necessary to remove the support from the frame in order to verify, in different positions, the radial clearance, by means of the angular oscillation between pin and bushing; light oscillations are allowed, but, these are excessive it is necessary to replace the support as soon as possible as the wear is extreme and may produce damages.

REDUCTION GEAR

The reduction gear is supplied with the right amount of recommended lubricant. Therefore it requires no maintenance excepted checking oil level and replacing oil when required.

The oil has to be replaced according to the working hours and operating temperature; if the reduction gears are working just for a few hours every day, it will be necessary to replace:

- a) mineral lubricating oil after 3 years max.
- b) synthetic lubricating oil after 5 years max.

It is recommended to reduce the lubrication time in case of particularly hard work conditions.

TRANSMISSION

The transmission (chain and pinions or chain coupling) must be greased every 40 working hours with special grease (see table).

Also check the right tensioning of the chain when it is greasing, in case of loosening, restore the correct tension by operating the special adjusters.

When the chain is lenghtned or wearied replace it, in the meantime, verify the pinions and if necessary replace them.

SPIRAL AND FRAME WEAR

To check the wear of the spiral, just measure the radial clearance between outside diameter of the spiral and bottom of the worm screw body. The spiral is the most wearable part, particularly in the outside part where the surface speed is higher and therefore the wear is bigger.

Check the thickness of the bottom of the frame and arrange for local or total replacement when wear or corrosion reduced excessively the thickness.

3.1.7 TROUBLE SHOOTING

Minor problems can be resolved without consulting a specialist.

FAULT:

MOTOR DOES NOT START

Possible reasons:

- 1) no main supply or lack of a single phase.
- 2) motor failure or failure in supply system.

Action:

- 1) check fuses and thermal relays, if faulty, replace, or reset.
- 2) repair or replace the part concerned. Verify tension in line.

MOTOR STARTS, BUT THEN STOPS

Possible reasons:

- 1) incorrect rotation.
- 2) screw obstruction.
- 3) output rate too high.
- 4) motor burnt out.
- 5) defective bearing or gear reducer.
- 6) outlet blocked.

Action:

- 1) change polarity.
- 2) change hanger bearings, if necessary, clean whole screw conveyor.
- 3) check ammeter reading, and output rate. If both rates are to high, reduce the material inlet flow or reduce the shaft speed, contact our technical department.
- 4) discover reason (see above) and only then replace motor.
- 5) discover reason (see 2) - could be normal wear - replace part concerned.
- 6) check outlet is free and that level controls etc. are functioning.

MOTOR STARTS, BUT SCREW DOES NOT CONVEY

Possible reasons:

- 1) gear pinion, gear drive shaft, transmission, broken.
- 2) incorrect rotation.
- 3) bad outflow of material from the inlet.

Action:

- 1) discover reason, replace part concerned.
- 2) change polarity.
- 3) improve outflow of material.

3.1.8 DEMOLITION AND WASTE DISPOSAL

To proceed at machinery demolition it is necessary dismantle the machine in relation to type of material involved.

- Drain reduction unit oil

NOTE: The drained liquids must not be mixed together and must be kept in closed containers, avoiding contamination with foreign substances.

Oil should be disposed of by authorised disposal and recycling plants.

Disassemble and separate selectively:

- electric material
- plastic material
- water pipes
- steel and cast iron
- other materials

WARNING: The above-mentioned materials must be disposed of according to the regulations in force and the type of product.

3.1.9 SET THE MACHINE TEMPORANEOUSLY OUT OF SERVICE

In case of stop of this equipment provide the following operation:

- Clean inside the case and remove the deposit on wheels and shafts.
- Grease with suitable product the shafts, inside and outside the heads and the transmission.
- Grease the felts and the felt cage.
- Reduce tension on belt or chains raising the tension unit.
- Grease all the external moving parts.

MANUAL FOR ERECTION AND MAINTENANCE

BELT CONVEYOR WITH CARRIAGE

Manufacturer: BARBIERI COSTRUZIONI MECCANICHE S.r.l.
via Morane 264 - 41125 Modena
tel. 059 - 300018 - 300023
fax 059 - 300095
e-mail info@barbieri-cm.it
web www.barbieri-cm.it

Client: DESMET BALLESTRA S.p.A.
Via P. Portaluppi, 17
20138 MILANO

Order n° 121235 dated 28-05-2012

Job n° 2F11

ITEM n° 64N1

MACHINE SERIAL	DRAWING	LENGTH M.	MANUF. YEAR
12193	NPF 80181-000	NPF 800/15,4	2012

INFORMATION

- 1.1.3 - Notice to installer
- 1.1.4 - Purpose of machine
 - Improper use
 - Noise level
- 1.1.5 - General characteristics
- 1.1.7 - Oils chart
- 1.1.8 - Supplied with the machine
- 1.1.9 - Technical assistance and maintenance
- 1.1.10 - Keep the manual

SAFETY

- 1.2.1 - Safety norms
- 1.2.2 - Introduction
- 1.2.6 - List of safety device
- 1.2.7 - Notes

INSTALLATION

- 1.3.1 - Lifting and transport
 - Storage
- 1.3.2 - Overall dimension and foundation
 - Cleaning
 - Packing disposal
- 1.3.3 - Machine indicator plates
- 1.3.4 - Erection marks on machine

OPERATION

- 2.2.1 - Erection
- 2.2.2 - Electric connection
 - General check to be carried out before turning the machine on
 - Oil supply in the machine
- 2.2.3 - Preliminary operation
- 2.2.4 - Start-up
- 2.2.6 - Operation

PERIODICAL MAINTENANCE

- 3.1.1 - Periodical maintenance
 - Maintenance
- 3.1.6 - Replacement
- 3.1.8 - Demolition and waste disposal
- 3.1.9 - Set the machine temporarily out of service

1.1.3 NOTICE TO INSTALLER OR USER

This machine cannot be used alone, but only connected and bolted to other machine. Never use the conveyor with bare inlet or outlet openings to avoid any possibility of access to rotating or dangerous parts; a furter planning should be carried by the user to make the whole arrangement be in compliance with the safety rules. It will be care of client or user arrange for setting protection mechanical and electrical (safety barrier, screws, switches etc.) related to dangerous points after survey when the assembling will be at the end.

IMPORTANT

Upon the delivery of the machine, the consumer must make sure that all the devices indicated in the paragraph of the safety manual are present and working correctly. Furthermore, he must mount in conformity with the instructions indicated those devices which are not mounted at the time of delivery to facilitate transport.

BE CAREFULL

It is forbidden to operate this equipment before the equipment or the machine where this will be built in be declared in compliance to machine directive 89/392 and subsequent modifications.

1.1.4 PURPOSE OF MACHINE

This equipment has been designed to be used in industries to carry product in quantity and quality as stated in technical data.

Using it with any other material should be considered improper and forbidden. See what stated in chapter 1.1.3.

IMPROPER USE

Improper uses, which may place operators in danger and for which the company declines all responsibility for injury or damage, are:

- use of the machine by operators who have not read and UNDERSTOOD this manual;
- use of the plant by unqualified operators;
- failure to maintain or inadequate maintenance and/or control of the plant;
- presence of the operator outside the walkway surfaces;
- walking on the belts, even if not in operation;
- filling up with materials of any kind with the plant in operation;
- operation of the plant without one or more safety devices (housings, limit switches, emergency buttons, parapets, etc.) installed.
- tampering with the safety devices.
- use of the plant for purposes other than those for which it was designed and constructed.
- see what stated in chapter 1.1.3.

SPECIFIC SAFETY PRECAUTIONS

ELECTRICAL RISKS

- If work has to be done on live electrical parts, first disconnect the power supply, then insulate yourself from the ground by means of insulating clothing. Never work with wet hands and/or feet. There are many risks involved.
- Never allow wires to block passage ways and/or to be placed close to heat sources or corrosive substances.
- Check the insulation frequently and report any faults.
- Never remove the safety guards until the power supply has been disconnected.

HYDRAULIC/PNEUMATIC CIRCUIT

Protect your body when carrying out checks for leaks on the hydraulic/pneumatic circuit.

RISKS

During the working time, the operator must NEVER put hands or use tools in the working area.

NOISE LEVEL

When designing this machine, the company has adopted technical solutions intended to keep the level of noise generated as low as possible. In spite of this, for reasons not directly linked to its construction but to the features of the plant in which it is included, high noise levels may be reached during normal conditions of use.

Normally, the operator's working position is separated from the machine, and the constant presence of an operative is not required.

CAUTION: Daily personal exposure in excess of 85 dB(A) may lead to loss of hearing, which must be prevented using soundproof ear plugs and muffs.

HEAT RISK

In case during process it is conveyed hot material dangerous for contact contact are necessary signals or protective barrier a carefull information to the workers about heat danger should be done.

1.1.5 GENERAL CHARACTERISTICS

The machine consist of a rubber belt sliding on V-roller.

The conveyor is made by a steel frame.

The drive and take-up heads are located at end.

The drive pulley is bar type and running on ball bearings.

The tail pulley bar type, has sliding bearings for belt take-up.

The conveyor is equipped with drive unit made by motor gear speed reducer.

Carriage on wheels.

Lifting by hands operated hydraulic pump.

Rotating nylon brush under drive pulley.

Electrical equipment are excluded from supply.

1.1.7 OILS CHART

PULLEY BEARINGS

Use lithium grease (it guarantee the a broad service conditions)
ESSO Beacon 2

REDUCER

Oil "ISO EP 220"
ESSO "Spartan" EP 220

SLIDE PARTS

Use lithium grease

MECHANICAL VARIATOR

(Disc type in oil bath)
Use oil type "ESSO" A.T.F. DEXRON
Oil with viscosity 160
SHELL DONAX TA

HIDRAULIC CYLINDER FOR CARRIAGE

"Esso" Nuto 68

Require security card from oil producer to be informed about specific risks.

1.1.8 SUPPLIED WITH THE MACHINE

Instructions manual for erection operating and maintenance.

Test certificate (together with the instruction manual).

1.1.9 TECHNICAL ASSISTANCE AND MAINTENANCE

For any information or request for repair work contact:

BARBIERI COSTRUZIONI MECCANICHE S.R.L.
Via Morane n°264
41125 MODENA
TEL. 059 / 300018 - 300023
FAX 059 / 300095

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Keep this manual in safe place since it must accompany the machine throughout its long operating life.

1.2.1 SAFETY NORMS

In preparing this chapter concerning safety, we have borne in mind the accident prevention laws in force and:

- ECC Directive n. 2006/42/CE and amendments
To try to harmonise the member states' norms concerning machine-tools.

EN12100-1

Safety of machinery

Basic concepts - General principles for design.

EN12100-2

Safety of machinery

Basic concepts - General principles for design.

Warning !!!

Strictly follow the safety norms highlighted below to ensure the correct use of the machine as regards the electrical fixtures and to prevent electrocutions, wounding, explosions and the outbreak of fires.

1.2.2 SAFETY

INTRODUCTION

- Never start any repairs and/or maintenance unless the plant is switched off and the measures necessary to prevent it being started up accidentally during the maintenance work have been taken.
- Never start up the motors if staff are doing maintenance work on the machine.

There are two possible maintenance in progress situations:

extraordinary maintenance, during which the entire plant is shut down for reasons not directly linked to the plant's production process, but to allow operations such as cleaning, painting, etc.;

routine maintenance, during which the machines are activated in manual mode for operations such as adjustments, greasing, belt tensioning, etc.

To assure that hazardous situations do not arise, unless otherwise specified all maintenance operations should be carried out in the following conditions:

- warning that maintenance is in progress on the machine placed in a clearly visible position on the plant control panel;
- operating staff informed in advance;
- user control levers and/or switches turned to OFF/0;
- master switch on control panel TURNED OFF;
- plant operating in "local" mode, and control panel keys removed and consigned to the plant maintenance foreman, in order to prevent accidental start-up.

Depending on the work to be carried out, wear protective clothing such as:

safety helmet, soundproof ear guards, safety goggles, dust mask, protective gloves, safety shoes, etc.

1.2.6 LIST OF SAFETY DEVICE ON CONVEYOR

1. Protection carter on take-up supports
2. Protection drive transmission
3. Protection on brush transmission
4. Protection on drive head
5. Protection on take-up head
6. See chapter 1.1.3

DEVICES TO BE ASSEMBLED BY INSTALLER OR USER

- Protection panels depending from distance of dangerous point.
- Emergency push button and key switch for safety during maintenance.

1.2.7 NOTES

This chapter outlining the safety devices and norms was drawn up bearing in mind the normal use of the machine as stated in the chapter on the use of the machine and the adequate preparation of the operators as regards the specific risks linked to the operation of the machine.

If the machine is not used according to instruction given in the "PURPOSE OF MACHINE" chapter in this manual, the manufacturer is not responsible for any damage caused to people and things.

Furthermore, the manufacturer is not responsible for any damage to people and things resulting from the non-compliance with the following warnings:

- a) adopt all the necessary precautions during the calibration, part replacement, cleaning, reparation or maintenance operations prevent someone else from turning the machine on.
- b) do not tamper with the safety devices and guards on the machine.
- c) do not remove any of the safety devices and guards on the machine.
- d) always make sure that the safety devices and guards have been remounted after their temporary removal for technical reasons ordered by the boss.

1.3.1 LIFTING AND TRANSPORT

Attention: the machine must only be shifted by skilled personnel (sling, trolley or crane operators, etc.) with lifting equipment (cranes, lift truck, etc) of suitable size.

The lifting and transport shall take place through anchorage by means of hooks to the eyebolt on the machine sides.

The machine must be hoisted using four steel cables with hooks of suitable size.

See drawings for lifting points (if supplied).

STORAGE

During storage, the machine must be kept in a dry and covered place.

Electric equipment must be protected from dampness. Ambient temperature should be between - 10 and + 55°C and relative humidity is lower than 95% without condensation.

1.3.2 OVERALL DIMENSIONS AND FOUNDATIONS

See machine drawing for number, size, and position of anchor bolts, check the correct connection and tightening of machine to foundation.

CLEANING

Before starting the machine, wipe away all protective oil from painted surfaces using alkaloid detergents such as oil of turpentine or petroleum naphtha.

NOTE: These liquids must be used on a cloth and not sprayed.

PACKING DISPOSAL

Pull out nails from wooden boards forming packing tops.

Dispose of wood, cardboard, nylon bags and nails according to regulations in force.

1.3.3 MACHINE INDICATOR PLATES

SAFETY, GUIDANCE AND NOTICE SIGNS

On the machine or plant are settled plates concerning "WARNING" or danger situations. It is compulsory by operators be informed where the plates are and that they are readable. Clean them with clean clothes, avoiding use of solvents.

Fig. 1)

SERIAL PLATE ("CE" IF SUPPLIED)

This sign is located on the right-hand side of the machine head, identifying the data provided by the regulations in force.



"ELECTRIC CURRENT" sign, black on yellow, located on the electric box (if supplied).

Fig. 2)

"CARTER" dangerous gear, located on transmission or revolving objects.



1.3.4 ERECTION MARKS ON MACHINE

See general drawing for erection.

2.2.1 ERECTION

The machinery has been fully assembled and run tested without product at the manufacturer factory with the supporting carriage.

The conveyor erection should have always reference to the general drawing.

CONVEYOR SHIPPED IN 2 PIECES OVERLAPPED

- The conveyor has been fully assembled at our workshop, and the disassembling has been at minimum.
The frame joint has been opened and the two parts were overlapped leaving inside the belt.
- To overlap the conveyor frame for delivery, and to help to move the belt during the overlapping could be necessary to remove some return roller; near the junction point, and fit in position when the operation is ended.
- Now to execute the opposite operation it is necessary to disassemble the return roller that now are over the belt, slide the top frame of conveyor and fit them again in their correct position.
- Set on the ground the 2 frames, and open the joint plates lift the upper frame and slide it slowly along the lower one and set in line. Approach the frame joints and bolt them together.
- Complete the assembling of the conveyor with all the parts, the roller should be perpendicular to the frame.
- Put the belt in tension acting on the screw take-up.
- Assemble the loading hopper and the top plows.

CONVEYOR WITH CARRIAGE

Assembling

- Fit the front and rear wheels on the carriage, if shipped separately.
- Connect the extensible frame to the front side of the carriage insert the pins to the plates.
- Joint the two conveyor frames together as described in the previous chapter.
- Join the carriage to conveyor as follow:
 - a) lift the whole conveyor and fit the pins to the carriage rear side
 - b) lift the front conveyor frame inclining.
 - c) Incline the extensible frame and connect the other end to the conveyor frame by the rods.
 - d) assemble the oil rubber pipe to cylinder and fix it to the carriage frame with clamps
- Provide to start the belt as following instructions for a correctly belt run.

Hydraulic conveyor rising

- 1) Check oil level in tank with the cylinder fully closed.
- 2) After the connection of the oil rubber pipe to cylinder, provide to bleed the air in hydraulic circuit: leaving the bolt located on the top of cylinder head, moving the bar on the hydraulic pump until the oil leaves from the screw hole; then screw again the bolt.
- 3) Rise the cylinder shaft acting on the bar of the manual pump; to lower the cylinder unscrew the hand grip on the pump.
- 4) The cylinder is equipped with:
 - Flow control valve to modify the descending speed, by screwing or unscrewing the external part of the valve
 - A security valve in case of breakage of the rubber pipe
- 5) The security valve operate also in case of too fast descending speed, if necessary lower the speed fill act on the flow control valve.
- 6) To release the safety valve when locked it is necessary operate the bar on the pump and rise slightly the cylinder shaft.
- 7) The valves are set at our workshop, it is possible any way to modify the setting of the security valve following the instruction attached.
- 8) Check small loss of oil from cylinder or pump; if necessary refill and bleed the air.
- 9) To oil refill in the tank use oil "Esso Nuto 68" or similar of other brand.

Use

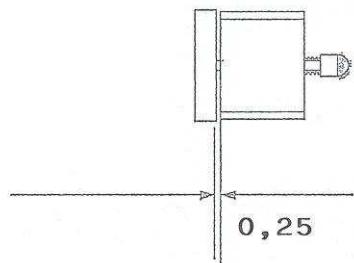
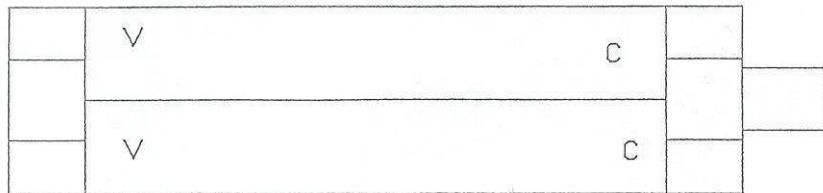
- Verify periodically the security valve efficiency, acting by a fast cylinder dive.
- To prevent tipping in case of overloads, keep the conveyor's chassis resting in the unloading area.
- If adjustments or cleaning are required along the conveyor, make sure that the machine is at a standstill and that the power supply to the electric motor has been disconnected. Take all appropriate precautions to ensure that it cannot be started up accidentally.
- Leave the safety feet resting on the floor when loading/unloading and only just above it for the rest of the time, to prevent tipping in case of a flat tyre.

Attention: NEVER STAND UNDERNEATH THE CONVEYOR

Maintenance

- If the cylinder does not travel for its full stroke, top up with hydraulic fluid and provide air bleed according to what previously explained.
- This operation must be carried out with the cylinder retracted.
- Keep control on the tyre pressure.

SIDE "C" TO CYLINDER
SIDE "V" TO SAFETY VALVE



THE SETTING OF THE SAFETY VALVE IS 0,25 mm.

- If the security valve operate at low descending speed increase the distance from plate
- If the valve does not operate decrease the distance from plate

2.2.2 ELECTRIC CONNECTION

First of all, verify that the operation voltage of the electric installation of the machine corresponds to the voltage used in the factory.

Connect the machine power cable to electric panel provided with magnetothermal switch suitable the motor power.

Connect earth wire (yellow/green) after making sure that earth connections are executed in compliance with regulations in force.

To verify the correct connection of the machine to the mains, act as follows:

- Apply voltage to the panel through the main switch.
- Start the motor trough the push button.

The rotation of the motor must take place according to the direction indicated by the arrow and which is printed on the flywheels housing. Otherwise, change a polarity of the connection to the mains.

The wrong rotation due to backstop inside reducer can affect the breakage of the backstop, for this provide to disconnect the motor from reducer.

GENERAL CHECK TO BE CARRIED OUT BEFORE TURNING THE MACHINE ON

Make sure that the safety devices are in place and are working correctly, and there is not damaged parts.

Make sure that the moving parts are not hindered in their movements.

Make sure that there are no damaged parts and that all parts have been mounted and are working correctly.

Any damaged safety devices or parts must be repaired or replaced.

OIL SUPPLY IN THE MACHINE

The machine is supplied with oil in reducer.

If necessary to provide for the supply or add to level before starting.

Introduce through the plug the oil stated in table, in any case.

The level can be checked through the transparent pilot light.

2.2.3 OPERATION BEFORE BELT STARTING

- The following instructions should be carried out at first belt starting as well as after partial disassembling for maintenance purpose.
- See that all bolts fastening mechanical equipment are securely tightened.
- Check that power supply match the data carried on the motor rating plate.
- Check that electrical connections are correct, that the terminal nuts are firmly tightened and that the motor enclosure is soundly earthed.
- See that cover is replaced on motor terminal box, with its sealing gaskets, also making sure that no unused cable holes are blanked off.
- See that motor is away from heat sources and that correct airflow around the motor is allowed.
- Check the drive pulley is perpendicular to the frame.
- Tension the belt acting on the two screws of the take-up pulley, this pulley should be in position perpendicular to the frame.
- See that proper guards are provided to prevent access to the belt conveyor according to safety distances norms.
- Check for and remove any tools, bolts, nuts, etc, that might have been left on the belt or near rotating equipment.
- Check the rotation of electric motor when the speed reducer is equipped with backstop.
In case of wrong rotation change the electric connection on the motor.

Be careful!! Repeated belt starting with wrong motor rotation can produce heavy damage to backstop unit (if existing).

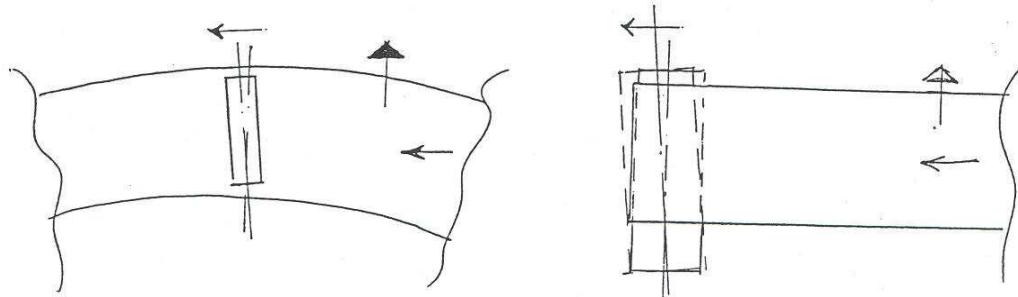
2.2.4 BELT STARTING

- 1) Make the belt run unloaded for some minutes and observe belt travel on the whole length.

At any tendency of the belt to run off, stop it quickly before damage occurs.

- 2) If the belt runs off, see following instructions:

- Check that drive and tail pulleys are level and square to centreline of conveyors. They should be kept that way and not be shifted as a means of training.
- Check that carrying and return idlers are level and square to centreline of conveyor (slots are always provided where idlers, or idlers groups, are assembled to the conveyor frame).
- If the belt is still running off, follow the belt travel in this sequence: drive pulley, return run, tail pulley, carrying run.
- Find place where the belt runs off: training action should begin at some point preceding the place where run off occurs.
- On one side of the conveyor, loosen bolts connecting an idler (or idlers group) to the frame; shift the idler forward or backward so that the belt is directed to its centreline.



If necessary repeat the operation with other idlers (or idlers groups).

This action should be carried out slowly, in small steps, because the belt requires some time to respond to correcting actions and because reverse belt travel could be badly affected.

- Immediately reverse the belt travel to check the effect of previous step. If the belt runs off, follow again, in small steps, the above instructions.
- In case it is not possible to find a satisfactory work condition (and only in this case), it is advisable to act on tail pulley: if the belt is running off toward the right side of the conveyor, shift slightly backward the right ball bearing unit of tail pulley.

- 3) Begin belt loading by degrees.
 Check free flow of material in loading and discharge points.
 The skirt seals of loading hopper should be adjusted to prevent side spillage of material.
 See that material is loaded in the centre of the belt: off centre loading can cause troubles to correct belt travel.
- 4) Carry out final belt tensioning (the loaded belt may require a tension increase, with respect to empty belt).
 Belt tension is arranged through the adjustment of screw devices, moving the ball bearing units of tail pulley.
 Adjustment should be balanced, so that pulley axis is always square to the centreline of the conveyor.
 For proper belt tensioning see that:
 - slippage is avoided between belt and drive pulley
 - excessive belt sag is avoided between carrying idlers
 - (on the other hand) excessive belt tension is avoided, not to cause undue strain on shafting, ball bearings and belt splice.
- 5) Check the electrical motor works correctly and within its specifications, with no abnormal noise, vibration or temperature rise.

2.2.6 OPERATION

The machine does not require a continuous survey, only regular control from responsible personnel, which should assure regular maintenance.

When the top cover or the bolted inspection doors are open be sure that the conveyor is stop and take actions to avoid that it is casually started.

The machine must be used in such a way that the operator (or any other person or animal) cannot enter through the inlet and outlet holes; the belt must always be used with the protection on so to prevent any damage to the personnel. Before remove protection make sure that the belt does not rotate and that the motor is disconnected.

Never use the conveyor with bare inlet or outlet; these holes must always be fastened respectively to the feeding and receiving machine, to avoid any possibility of access to the inside rotating parts; any use with bare holes must be planned by the user in compliance with the safety rules (safety barriers and screens, test of the safety distances for the limbs etc).

Any improper use and any arbitrary modification to the machine will relieve the manufacturer from his liabilities for any damage and will cause the expiration of the guarantee.

To limit overloads we advice do not start the conveyor fully loaded, to avoid-it it is advisable to stop feeding the product before stopping the conveyor, and let it running until the belt is empty.

During first time of operation we advice to run the machine with reduced capacity.

3.1.1 PERIODICAL MAINTENANCE OPERATIONS

The machine must be submitted to inspection and maintenance to safeguard technical, productive and safety conditions provided by the manufacturer.

Maintenance operations must be performed by technical or maintenance personnel only. Tampering by non-skilled workers can compromise machine operation and relieves manufacturer from every liability.

WARNING: before carrying out maintenance, cut off the power supply to the machine by means of the key switch.

DAILY:

It is advisable to carry daily a careful visual inspection (before starting) of machinery to be sure the are not loss or irregularity.

Check oil loss, bolt loose, seals weared, product deposits etc.

WEEKLY:

- Check the belt tension.
- Lubricate bearings.
- Check brush efficiency.

ELECTRIC SYSTEM

Yearly inspect electric insulation of the electric system and protection conductor (earth) by an authorised electrician.

Tampering by non-authorised personnel can compromise machine operation and relieves manufacturer form every liability.

WEAR PARTS

Bearings, belt, brush and rollers are product subject to wear and their replacement need to be scheduled in advance.

MAINTENANCE

1) SAFETY

- Remember that use and maintenance of belt conveyors may be dangerous if safety principles are not followed.
If safety distances cannot be observed (ex. for maintenance purpose), remember that all rotating parts can be dangerous, mainly drive pulley and tail pulley.
All maintenance actions should be carried out after stopping the conveyor (including belt tensioning and belt training).
Before starting the conveyor again, be sure that nobody is in danger.

2) MAINTENANCE INTERVALS

- The inspection and maintenance intervals depend on the actual operating conditions (loads, starting frequency, etc.) and ambient conditions (dust, humidity, etc.).
It is advisable to check the conveyor carefully in the first working period, then eventually correct and adapt the following general guidelines.

3) TENSIONING

- Belt tensioning should be checked regularly, especially during the first running period or in case of excessive belt elongation.
- Belt tensioning should be at minimum to prevent slippage, an excessive pretensioning cause elongation.
- Keep greased the take-up sliding parts.
- When the take-up is at the end-run a belt substitution or shortening is necessary.

4) BELT

- Avoid build-up of material on both sides of the belt.
Check efficiency of cleaning devices; replace the blades of belt scrapers.
- See that the belt is not in contact with oil, grease, solvents and corrosives liquids.
- See that material temperature is below 90°C.

- Periodically check the cover wear on both sides of the belt and on its whole length. Inspection intervals will depend on material characteristics and service severity.
- Minor cuts or gouges in covers, that penetrate to the belt plies, should be repaired immediately, through the use of repair doughs, cold patches or spot vulcanised repairs, carried out by skilled personnel.
- For major damages, involving plies too, consult the manufacturer.

5) IDLERS

- Avoid build-up of material on idlers; check efficiency of cleaning devices. Material should not accumulate under the idlers: provide periodic removal if necessary.
- Ensure that all idlers turn freely. Provide replacement or servicing of idlers as soon as running is difficult or wear in ball bearings is excessive.

6) PULLEYS

- Avoid build-up of material on pulleys surface; check efficiency of cleaning devices.
- Periodically check and grease pillow blocks' bearings (see lubricant table).

7) SPEED REDUCER

- The speed reducer is factory-filled with synthetic oil providing life-lubrication: for maintenance or filling check required relate to manufacturer requirement.

8) ELECTRIC MOTOR

- Work on electric motor should be carried out with the motor stopped and disconnected.
- Periodically checks the security of all electrical connections (including earthing system).
- The motor should be kept as clean as possible and the flow of cooling air should not be restricted, even temporarily.
Periodically check motor temperature rise.
- Every sixth month check the shaft turns freely.
The bearings are life-lubricated; if necessary they must be changed, according to manufacturer's instructions.

9) FRAME AND AUXILIARY EQUIPMENT

- Periodically check adjustment of belt scrapers.
If a higher pressure is required to clean the outside surface of the belt:
 - loosen 2 fixing bolts with 17mm spanner
 - apply torque to elastic arms on both sides with a 30mm spanner
 - tighten again the fixing bolts.When necessary replace worn blades of belt scrapers.
- When necessary replace skirts in conveyor skirt boards.
- Periodically check tightening of bolts that ensure structural stability and fastening of auxiliary equipment (scrapers, idlers, etc.).

10) BRUSH

Check the brush efficiency, when the nylon strip do not clear the belt lift the whole unit by loosen the bearing bolts, lifting the brush and tighting again.

Adjust the drive chain by the moving the pinion.

When the nylon strips are weared replace it with a new one.

3.1.6 REPLACEMENT

BELT REPLACEMENT (FIELD VULCANISATION)

After the belt is stopped remove protections on pulleys and skirts, release the belt acting on bolt on take-up bearing or lifting the counter weight ballast and anchor to the frame.

Cut the old belt and extract from the conveyor and rolling it, the old belt must be sent to discharge according to law in use at location where the plant is settled.

Insert the new belt edge and unroll along the frame with a rope or a "tir-for" until the 2 belt edges are near.

The vulcanisation should be carried out by specialized personnel only.

When the vulcanisation is over remove all the tools from the machine, reinstall all the safety equipment.

Restore the tensioning on belt acting as stated at chapter "starting" at point tensioning and run-off.

3.1.8 DEMOLITION AND WASTE DISPOSAL

To proceed at machinery demolition it is necessary dismantle the machine in relation to type of material involved.

- Drain reduction unit oil

NOTE: The drained liquids must not be mixed together and must be kept in closed containers, avoiding contamination with foreign substances.

Oil should be disposed of by authorised disposal and recycling plants.

Disassemble and separate selectively:

- electric material
- plastic material
- water pipes
- steel and cast iron
- other materials

WARNING: The above-mentioned materials must be disposed of according to the regulations in force and the type of product.

3.1.9 SET THE MACHINE TEMPORANEOUSLY OUT OF SERVICE

In case of stop of this equipment provide the following operation:

- Clean inside frame and remove the deposit on pulleys and shafts.
- Grease with suitable product the shafts, inside and outside the heads.
- Reduce tension on belt or loosening the tension belts.
- Grease all the external moving parts.

MANUAL FOR ERECTION AND MAINTENANCE

BELT CONVEYOR

Manufacturer: BARBIERI COSTRUZIONI MECCANICHE S.r.l.
via Morane 264 - 41125 Modena
tel. 059 - 300018 - 300023
fax 059 - 300095
e-mail info@barbieri-cm.it
web www.barbieri-cm.it

Client: DESMET BALLESTRA S.p.A.
Via P. Portaluppi, 17
20138 MILANO

Order n° 121235 dated 28-05-2012

Job n° 2F11

ITEM n° 65N1

MACHINE SERIAL	DRAWING	LENGTH M.	MANUF. YEAR
12194	NPF 3081-000	NPF 300/10,35	2012

INFORMATION

- 1.1.3 - Notice to installer
- 1.1.4 - Purpose of machine
 - Improper use
 - Noise level
- 1.1.5 - General characteristics
- 1.1.7 - Oils chart
- 1.1.8 - Supplied with the machine
- 1.1.9 - Technical assistance and maintenance
- 1.1.10 - Keep the manual

SAFETY

- 1.2.1 - Safety norms
- 1.2.2 - Introduction
- 1.2.6 - List of safety device
- 1.2.7 - Notes

INSTALLATION

- 1.3.1 - Lifting and transport
 - Storage
- 1.3.2 - Overall dimension and foundation
 - Cleaning
 - Packing disposal
- 1.3.3 - Machine indicator plates
- 1.3.4 - Erection marks on machine

OPERATION

- 2.2.1 - Erection
- 2.2.2 - Electric connection
 - General check to be carried out before turning the machine on
 - Oil supply in the machine
- 2.2.3 - Preliminary operation
- 2.2.4 - Start-up
- 2.2.6 - Operation

PERIODICAL MAINTENANCE

- 3.1.1 - Periodical maintenance
 - Maintenance
- 3.1.6 - Replacement
- 3.1.8 - Demolition and waste disposal
- 3.1.9 - Set the machine temporarily out of service

1.1.3 NOTICE TO INSTALLER OR USER

This machine cannot be used alone, but only connected and bolted to other machine. Never use the conveyor with bare inlet or outlet openings to avoid any possibility of access to rotating or dangerous parts; a furter planning should be carried by the user to make the whole arrangement be in compliance with the safety rules. It will be care of client or user arrange for setting protection mechanical and electrical (safety barrier, screws, switches etc.) related to dangerous points after survey when the assembling will be at the end.

IMPORTANT

Upon the delivery of the machine, the consumer must make sure that all the devices indicated in the paragraph of the safety manual are present and working correctly. Furthermore, he must mount in conformity with the instructions indicated those devices which are not mounted at the time of delivery to facilitate transport.

BE CAREFULL

It is forbidden to operate this equipment before the equipment or the machine where this will be built in be declared in compliance to machine directive 89/392 and subsequent modifications.

1.1.4 PURPOSE OF MACHINE

This equipment has been designed to be used in industries to carry product in quantity and quality as stated in technical data.

Using it with any other material should be considered improper and forbidden. See what stated in chapter 1.1.3.

IMPROPER USE

Improper uses, which may place operators in danger and for which the company declines all responsibility for injury or damage, are:

- use of the machine by operators who have not read and UNDERSTOOD this manual;
- use of the plant by unqualified operators;
- failure to maintain or inadequate maintenance and/or control of the plant;
- presence of the operator outside the walkway surfaces;
- walking on the belts, even if not in operation;
- filling up with materials of any kind with the plant in operation;
- operation of the plant without one or more safety devices (housings, limit switches, emergency buttons, parapets, etc.) installed.
- tampering with the safety devices.
- use of the plant for purposes other than those for which it was designed and constructed.
- see what stated in chapter 1.1.3.

SPECIFIC SAFETY PRECAUTIONS

ELECTRICAL RISKS

- If work has to be done on live electrical parts, first disconnect the power supply, then insulate yourself from the ground by means of insulating clothing. Never work with wet hands and/or feet. There are many risks involved.
- Never allow wires to block passage ways and/or to be placed close to heat sources or corrosive substances.
- Check the insulation frequently and report any faults.
- Never remove the safety guards until the power supply has been disconnected.

HYDRAULIC/PNEUMATIC CIRCUIT

Protect your body when carrying out checks for leaks on the hydraulic/pneumatic circuit.

RISKS

During the working time, the operator must NEVER put hands or use tools in the working area.

NOISE LEVEL

When designing this machine, the company has adopted technical solutions intended to keep the level of noise generated as low as possible. In spite of this, for reasons not directly linked to its construction but to the features of the plant in which it is included, high noise levels may be reached during normal conditions of use.

Normally, the operator's working position is separated from the machine, and the constant presence of an operative is not required.

CAUTION: Daily personal exposure in excess of 85 dB(A) may lead to loss of hearing, which must be prevented using soundproof ear plugs and muffs.

HEAT RISK

In case during process it is conveyed hot material dangerous for contact contact are necessary signals or protective barrier a carefull information to the workers about heat danger should be done.

1.1.5 GENERAL CHARACTERISTICS

The machine consist of a plastic belt with side boards and central V Belt guide on the bottom side sliding on plastic plate.

The conveyor is made by a steel frame closed type dust protect with bottom panels removable with snap hooks in order to clean the bottom part and bolted panel as top cover.

The drive and take-up heads are located at end.

The drive pulley is bar type and running on ball bearings.

The tail pulley bar type, has sliding bearings for belt take-up.

The conveyor is equipped with drive unit made by motor gear speed reducer.

Adjustable nylon brush at head drive.

Electrical equipment are excluded from supply.

1.1.7 OILS CHART

PULLEY BEARINGS

Use lithium grease (it guarantee the a broad service conditions)
ESSO Beacon 2

REDUCER

Oil "ISO EP 220"
ESSO "Spartan" EP 220

SLIDE PARTS

Use lithium grease

Require security card from oil producer to be informed about specific risks.

1.1.8 SUPPLIED WITH THE MACHINE

Instructions manual for erection operating and maintenance.

Test certificate (together with the instruction manual).

1.1.9 TECHNICAL ASSISTANCE AND MAINTENANCE

For any information or request for repair work contact:

BARBIERI COSTRUZIONI MECCANICHE S.R.L.
Via Morane n°264
41125 MODENA
TEL. 059 / 300018 - 300023
FAX 059 / 300095

We will provide all technical information or arrange for technical assistance on field.

1.1.10 WHERE TO KEEP MACHINE OPERATING MANUAL

Keep this manual in safe place since it must accompany the machine throughout its long operating life.

1.2.1 SAFETY NORMS

In preparing this chapter concerning safety, we have borne in mind the accident prevention laws in force and:

- ECC Directive n. 2006/42/CE and amendments
To try to harmonise the member states' norms concerning machine-tools.

EN12100-1

Safety of machinery

Basic concepts - General principles for design.

EN12100-2

Safety of machinery

Basic concepts - General principles for design.

Warning !!!

Strictly follow the safety norms highlighted below to ensure the correct use of the machine as regards the electrical fixtures and to prevent electrocutions, woundings, explosions and the outbreak of fires.

1.2.2 SAFETY

INTRODUCTION

- Never start any repairs and/or maintenance unless the plant is switched off and the measures necessary to prevent it being started up accidentally during the maintenance work have been taken.
- Never start up the motors if staff are doing maintenance work on the machine.

There are two possible maintenance in progress situations:

extraordinary maintenance, during which the entire plant is shut down for reasons not directly linked to the plant's production process, but to allow operations such as cleaning, painting, etc.;

routine maintenance, during which the machines are activated in manual mode for operations such as adjustments, greasing, belt tensioning, etc.

To assure that hazardous situations do not arise, unless otherwise specified all maintenance operations should be carried out in the following conditions:

- warning that maintenance is in progress on the machine placed in a clearly visible position on the plant control panel;
- operating staff informed in advance;
- user control levers and/or switches turned to OFF/0;
- master switch on control panel TURNED OFF;
- plant operating in "local" mode, and control panel keys removed and consigned to the plant maintenance foreman, in order to prevent accidental start-up.

Depending on the work to be carried out, wear protective clothing such as:

safety helmet, soundproof ear guards, safety goggles, dust mask, protective gloves, safety shoes, etc.

1.2.6 LIST OF SAFETY DEVICE ON CONVEYOR

The conveyor is fully closed with adjustment from outside.

DEVICES TO BE ASSEMBLED BY INSTALLER OR USER

- Protection panels depending from distance of dangerous point.
- Emergency push button and key switch for safety during maintenance.
- If required micro switch on removable panels.

1.2.7 NOTES

This chapter outlining the safety devices and norms was drawn up bearing in mind the normal use of the machine as stated in the chapter on the use of the machine and the adequate preparation of the operators as regards the specific risks linked to the operation of the machine.

If the machine is not used according to instruction given in the "PURPOSE OF MACHINE" chapter in this manual, the manufacturer is not responsible for any damage caused to people and things.

Furthermore, the manufacturer is not responsible for any damage to people and things resulting from the non-compliance with the following warnings:

- a) adopt all the necessary precautions during the calibration, part replacement, cleaning, reparation or maintenance operations prevent someone else from turning the machine on.
- b) do not tamper with the safety devices and guards on the machine.
- c) do not remove any of the safety devices and guards on the machine.
- d) always make sure that the safety devices and guards have been remounted after their temporary removal for technical reasons ordered by the boss.

1.3.1 LIFTING AND TRANSPORT

Attention: the machine must only be shifted by skilled personnel (sling, trolley or crane operators, etc.) with lifting equipment (cranes, lifttruck, etc) of suitable size.

The lifting and transport shall take place through anchorage by means of hooks to the eyebolt on the machine sides.

The machine must be hoisted using four steel cables with hooks of suitable size.

See drawings for lifting points (if supplied).

STORAGE

During storage, the machine must be kept in a dry and covered place.

Electric equipment must be protected from dampness. Ambient temperature should be between - 10 and + 55°C and relative humidity is lower than 95% without condensation.

1.3.2 OVERALL DIMENSIONS AND FOUNDATIONS

See machine drawing for number, size, and position of anchor bolts, check the correct connection and tightening of machine to foundation.

CLEANING

Before starting the machine, wipe away all protective oil from painted surfaces using alkaloid detergents such as oil of turpentine or petroleum naphtha.

NOTE: These liquids must be used on a cloth and not sprayed.

PACKING DISPOSAL

Pull out nails from wooden boards forming packing tops.

Dispose of wood, cardboard, nylon bags and nails according to regulations in force.

1.3.3 MACHINE INDICATOR PLATES

SAFETY, GUIDANCE AND NOTICE SIGNS

On the machine or plant are settled plates concerning "WARNING" or danger situations. It is compulsory by operators be informed where the plates are and that they are readable. Clean them with clean clothes, avoiding use of solvents.

Fig. 1)

SERIAL PLATE ("CE" IF SUPPLIED)

This sign is located on the right-hand side of the machine head, identifying the data provided by the regulations in force.



"ELECTRIC CURRENT" sign, black on yellow, located on the electric box (if supplied).

Fig. 2)

"CARTER" dangerous gear, located on transmission or revolving objects.



1.3.4 ERECTION MARKS ON MACHINE

See general drawing for erection.

2.2.1 ERECTION

The machinery has been fully assembled and run tested without product at the manufacturer factory with the supporting feet shipped separately.

- Erect the conveyor on his feet, locate the whole unit in its final position and fix it to the floor.
- Assembling the auxiliary equipment if needed (covers, discharge chute, loading hopper, etc.)
- Level the conveyor acting on feet screw.

The conveyor erection should have always reference to the general drawing.

CONVEYOR SHIPPED IN 2 PIECES OVERLAPPED

- The conveyor has been fully assembled at our workshop, and the disassembling has been at minimum.
The frame joint has been opened and the two parts were overlapped leaving inside the belt.
- Set on the ground the 2 frames, and open the joint plates lift the upper frame and slide it slowly along the lower one and set in line. Approach the frame joints and bolt them together.
- Complete the assembling of the conveyor with all the parts, the roller should be perpendicular to the frame.
- Put the belt in tension acting on the screw take-up.
- Set the bent at the floor or foundation and fix them.
- Erect with a crane the whole conveyor on the bents and fix with bolts.
- Level carefully by distance plates the bents (or by mean of adjustable units) to set in level and straight the conveyor both from top and from side.
Fix firmly the bents at the ground.

2.2.2 ELECTRIC CONNECTION

First of all, verify that the operation voltage of the electric installation of the machine corresponds to the voltage used in the factory.

Connect the machine power cable to electric panel provided with magnetothermal switch suitable the motor power.

Connect earth wire (yellow/green) after making sure that earth connections are executed in compliance with regulations in force.

To verify the correct connection of the machine to the mains, act as follows:

- Apply voltage to the panel through the main switch.
- Start the motor trough the push button.

The rotation of the motor must take place according to the direction indicated by the arrow and which is printed on the flywheels housing. Otherwise, change a polarity of the connection to the mains.

The wrong rotation due to backstop inside reducer can affect the breakage of the backstop, for this provide to disconnect the motor from reducer.

GENERAL CHECK TO BE CARRIED OUT BEFORE TURNING THE MACHINE ON

Make sure that the safety devices are in place and are working correctly, and there is not damaged parts.

Make sure that the moving parts are not hindered in their movements.

Make sure that there are no damaged parts and that all parts have been mounted and are working correctly.

Any damaged safety devices or parts must be repaired or replaced.

OIL SUPPLY IN THE MACHINE

The machine is supplied with oil in reducer.

If necessary to provide for the supply or add to level before starting.

Introduce through the plug the oil stated in table, in any case.

The level can be checked through the transparent pilot light.

2.2.3 OPERATION BEFORE BELT STARTING

- The following instructions should be carried out at first belt starting as well as after partial disassembling for maintenance purpose.
- See that all bolts fastening mechanical equipment are securely tightened.
- Check that power supply match the data carried on the motor rating plate.
- Check that electrical connections are correct, that the terminal nuts are firmly tightened and that the motor enclosure is soundly earthed.
- See that cover is replaced on motor terminal box, with its sealing gaskets, also making sure that no unused cable holes are blanked off.
- See that motor is away from heat sources and that correct airflow around the motor is allowed.
- Check the drive pulley is perpendicular to the frame.
- Tension the belt acting on the two screws of the take-up pulley, this pulley should be in position perpendicular to the frame.
- See that proper guards are provided to prevent access to the belt conveyor according to safety distances norms.
- Check for and remove any tools, bolts, nuts, etc, that might have been left on the belt or near rotating equipment.
- Check the rotation of electric motor when the speed reducer is equipped with backstop.
In case of wrong rotation change the electric connection on the motor.

Be careful!! Repeated belt starting with wrong motor rotation can produce heavy damage to backstop unit if existing.

2.2.4 BELT STARTING

- 1) Make the belt run unloaded for some minutes and observe belt travel on the whole length.
At any tendency of the belt to run off, stop it quickly before damage occurs.
- 2) The belt is kept in line by a "V" belt vulcanized on the bottom side for this it is necessary that it does not hit the sides of the race of the drive and return pulley.
- 3) If the belt runs off, see following instructions:
 - Check that drive and tail pulleys are level and square to centreline of conveyors. They should be kept that way and not be shifted as a means of training.
 - Check that return wheels are level and square to centreline of conveyor (slots are always provided where idlers, or idlers groups, are assembled to the conveyor frame).
 - If the belt is still running off, follow the belt travel in this sequence: drive pulley, return run, tail pulley, carrying run.
 - Find place where the belt runs off: training action should begin at some point preceding the place where run off occurs.
 - On one side of the conveyor, loosen bolts connecting an idler (or idlers group) to the frame; shift the idler forward or backward so that the belt is directed to its centreline. If necessary repeat the operation with other idlers (or idlers groups). This action should be carried out slowly, in small steps, because the belt requires some time to respond to correcting actions and because reverse belt travel could be badly affected.
 - Immediately reverse the belt travel to check the effect of previous step. If the belt runs off, follow again, in small steps, the above instructions.
 - In case it is not possible to find a satisfactory work condition (and only in this case), it is advisable to act on tail pulley: if the belt is running off toward the right side of the conveyor, shift slightly backward the right ball bearing unit of tail pulley.
- 4) Begin belt loading by degrees.
Check free flow of material in loading and discharge points.
The skirt seals of loading hopper should be adjusted to prevent side spillage of material.
See that material is loaded in the center of the belt: off center loading can cause troubles to correct belt travel.

- 5) Carry out final belt tensioning (the loaded belt may require a tension increase, with respect to empty belt).

Belt tension is arranged through the adjustment of screw devices, moving the ball bearing units of tail pulley.

Adjustment should be balanced, so that pulley axis is always square to the centreline of the conveyor.

For proper belt tensioning see that:

- slippage is avoided between belt and drive pulley
- excessive belt sag is avoided between carrying idlers
- (on the other hand) excessive belt tension is avoided, not to cause undue strain on shafting, ball bearings and belt splice.

- 6) Check the electrical motor works correctly and within its specifications, with no abnormal noise, vibration or temperature rise.

2.2.6 OPERATION

The machine does not require a continuous survey, only regular control from responsible personnel, which should assure regular maintenance.

When the top cover or the bolted inspection doors are open be sure that the conveyor is stop and take actions to avoid that it is casually started.

The machine must be used in such a way that the operator (or any other person or animal) cannot enter through the inlet and outlet holes; the belt must always be used with the protection on so to prevent any damage to the personnel. Before remove protection make sure that the belt does not rotate and that the motor is disconnected.

Never use the conveyor with bare inlet or outlet; these holes must always be fastened respectively to the feeding and receiving machine, to avoid any possibility of access to the inside rotating parts; any use with bare holes must be planned by the user in compliance with the safety rules (safety barriers and screens, test of the safety distances for the limbs etc).

Any improper use and any arbitrary modification to the machine will relieve the manufacturer from his liabilities for any damage and will cause the expiration of the guarantee.

To limit overloads we advice do not start the conveyor fully loaded, to avoid it is advisable to stop feeding the product before stopping the conveyor, and let it running until the belt is empty.

During first time of operation we advice to run the machine with reduced capacity.

CLEANING

Check periodically the dust quantity lying and the bottom opening the panel with the snap hook removing the dust and cleaning the inside; open the top panels check the wear of the sliding plate and clean the inside with an aspirator.

3.1.1 PERIODICAL MAINTENANCE OPERATIONS

The machine must be submitted to inspection and maintenance to safeguard technical, productive and safety conditions provided by the manufacturer.

Maintenance operations must be performed by technical or maintenance personnel only. Tampering by non-skilled workers can compromise machine operation and relieves manufacturer from every liability.

WARNING: before carrying out maintenance, cut off the power supply to the machine by means of the key switch.

DAILY:

It is advisable to carry daily a careful visual inspection (before starting) of machinery to be sure the are not loss or irregularity.

Check oil loss, bolt loose, seals weared, product deposits etc.

WEEKLY:

- Check the belt tension.
- Lubricate bearings.
- Check the wear of "V" belt on belt bottom.
- Check brush efficiency.

PERIODICAL:

- Clean the dust inside the conveyor with control of rotation of belt return wheels

ELECTRIC SYSTEM

Yearly inspect electric insulation of the electric system and protection conductor (earth) by an authorised electrician.

Tampering by non-authorised personnel can compromise machine operation and relieves manufacturer form every liability.

WEAR PARTS

Bearings, belt, brush and wheels are product subject to wear and their replacement need to be scheduled in advance.

MAINTENANCE

1) SAFETY

- Remember that use and maintenance of belt conveyors may be dangerous if safety principles are not followed.
If safety distances cannot be observed (ex. for maintenance purpose), remember that all rotating parts can be dangerous, mainly drive pulley and tail pulley.
All maintenance actions should be carried out after stopping the conveyor (including belt tensioning and belt training).
Before starting the conveyor again, be sure that nobody is in danger.

2) MAINTENANCE INTERVALS

- The inspection and maintenance intervals depend on the actual operating conditions (loads, starting frequency, etc.) and ambient conditions (dust, humidity, etc.).
It is advisable to check the conveyor carefully in the first working period, then eventually correct and adapt the following general guidelines.

3) TENSIONING

- Belt tensioning should be checked regularly, especially during the first running period or in case of excessive belt elongation.
- Belt tensioning should be at minimum to prevent slippage, an excessive pretensioning cause elongation.
- Keep greased the take-up sliding parts.
- When the take-up is at the end-run a belt substitution or shortening is necessary.

4) BELT

- Avoid build-up of material on both sides of the belt.
Check efficiency of cleaning devices; replace the blades of belt scrapers.
- See that the belt is not in contact with oil, grease, solvents and corrosives liquids.
- See that material temperature is below 90°C.

- Periodically check the cover wear on both sides of the belt and on its whole length. Inspection intervals will depend on material characteristics and service severity.
- Minor cuts or gouges in covers, that penetrate to the belt plies, should be repaired immediately, through the use of repair doughs, cold patches or spot vulcanised repairs, carried out by skilled personnel.
- For major damages, involving plies too, consult the manufacturer.

5) RETURN WHEELS

- Avoid build-up of material on wheels; check efficiency of cleaning devices. Material should not accumulate under the wheels: provide periodic removal if necessary.
- Ensure that all wheels turn freely. Provide replacement or servicing of idlers as soon as running is difficult or wear in ball bearings is excessive.

6) PULLEYS

- Avoid build-up of material on pulleys surface; check efficiency of cleaning devices.
- Periodically check and grease pillow blocks' bearings (see lubricant table).

7) SPEED REDUCER

- The speed reducer is factory-filled with synthetic oil providing life-lubrication: for maintenance or filling check required relate to manufacturer requirement.

8) ELECTRIC MOTOR

- Work on electric motor should be carried out with the motor stopped and disconnected.
- Periodically checks the security of all electrical connections (including earthing system).
- The motor should be kept as clean as possible and the flow of cooling air should not be restricted, even temporarily.
Periodically check motor temperature rise.
- Every sixth month check the shaft turns freely.
The bearings are life-lubricated; if necessary they must be changed, according to manufacturer's instructions.

9) FRAME AND AUXILIARY EQUIPMENT

- Periodically check tightening of bolts that ensure structural stability and fastening of auxiliary equipment (scrapers, idlers, etc.).

10) BRUSH

Check the brush efficiency, when the nylon strip do not clear the belt lift the whole unit by loosen the bolts, lifting the brush and tighting again.

When the nylon strips are weared replace it with a new one.

3.1.6 REPLACEMENT

ASSEMBLING BELT RING CLOSED

- Remove the upper cover.
- Release the belt take-up.
- Remove the take-up pulley withdrawing it from the plate opening.
- Remove the drive head plate in the side opposite to transmission leaving the drive pulley overhanging.
- Unscrew the cross members of belt sliding plate bolted to conveyor frame and remove it from conveyor.
- Remove the old belt.
- Assemble the new belt.
- Carry out in the opposite way all the operations previously described.
- Perform all the operation for centring the belt as stated in chapter.

3.1.8 DEMOLITION AND WASTE DISPOSAL

To proceed at machinery demolition it is necessary dismantle the machine in relation to type of material involved.

- Drain reduction unit oil

NOTE: The drained liquids must not be mixed together and must be kept in closed containers, avoiding contamination with foreign substances.

Oil should be disposed of by authorised disposal and recycling plants.

Disassemble and separate selectively:

- electric material
- plastic material
- water pipes
- steel and cast iron
- other materials

WARNING: The above-mentioned materials must be disposed of according to the regulations in force and the type of product.

3.1.9 SET THE MACHINE TEMPORANEOUSLY OUT OF SERVICE

In case of stop of this equipment provide the following operation:

- Clean inside frame and remove the deposit on pulleys and shafts.
- Grease with suitable product the shafts, inside and outside the heads.
- Reduce tension on belt or loosening the tension belts.
- Grease all the external moving parts.