

DN 150:HV62.2

SUPPORT O-RING CO O-RING CO O-RING S DISPOSITI SNODO MOLLE A DADO / CO ATTUATO PREMIGUZ BUSSOLA BUSSOLA GUARNIZII SEDI SEEDI SEEDI SEERA STELO CHIUSURZ VITE CORPO PARTI	ELET!	四									- 1	- 1				- 1				POS.
DORPO TELO VO ANTISTATICO TAZZA TAZZA ONTRODADO ORE PNEUMATICO ARNIZIONE ONE	ELETTROVALVOLA	ELETTROVALVOLA	SUPPORTO	O-RING CORPO	O-RING STELO	DISPOSITIVO ANTISTATICO	SNODO	>	DADO / CONTRODADO	ATTUATORE PNEUMATICO	PREMIGUARNIZIONE	BUSSOLA	GUARNIZIONE	SEDI	SFERA	STELO	CHIUSURA	VITE CORPO	CORPO	PARTICOLARE
ADAPTER PLATE BODY O-RING STEM O-RING ANTISTATIC DEVICE JOINT SPRING WASHER NUT/LOCK NUT PNEUMATIC ACTUATOR GLAND WASHER BODY GASKET SEATS BALL STEM CLOSURE SCREW BODY BODY	SOLENOID VALVE	SOLENOID VALVE	ADAPTER PLATE	BODY O-RING	STEM O-RING	ANTISTATIC DEVICE	TNIOL	SPRING WASHER	NUT/LOCK NUT	PNEUMATIC ACTUATOR	GLAND	WASHER	BODY GASKET	SEATS	BALL	STEM	CLOSURE	SCREW	BODY	PART NAME
FE 37 UNI 7070 VITON VITON AISI 316 ASTM A105 50CrV4 UNI 3545 6S UNI 3740 GAT SE. 250 FAILURE CLOSE CF9SMmPb36 UNI 4838 P.T.F.E. + GRAF. P.T.F.E. + GRAF. R.P.T.F.E. + GRAF. AISI 304 AISI 410 ASTM A216 WCB 8.8 UNI 3740 ASTM A216 WCB MATERIALE	Mod. SCG551A001MS	Mod. SCG551A001MS	Fe 37 UNI 7070	VITON	VITON	AISI 316	ASTM A105	50CrV4 UNI 3545	6S UNI 3740	GAT S.E. 250 FAILURE CLOSE	CF9SMnPb36 UNI 4838	+	+	R.P.T.F.E.	AISI 304	AISI 410	ASTM A216 WCB	8.8 UNI 3740	ASTM A216 WCB	MATERIALE
		b						•						-				_	_	<u> </u>

BALL VALVE TYPE "ALFA 10 NF"

COPIED REPRODUCTED OR SHARED WITH OTHER PEOPLE WITHO

S18187 DRAWING: CHECKED

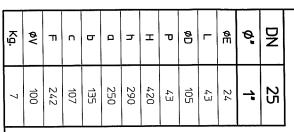
APPROVED

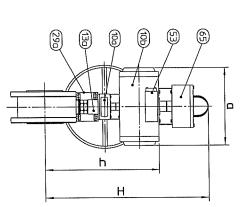
ASSEMBLY DRAWING

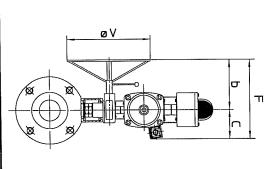
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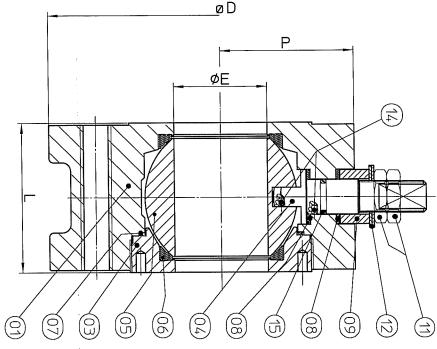
REVISION

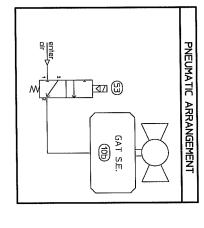
COMM. 2F11A/031











			9
MATERIAL	PART NAME	PARTICOLARE	POS
ASTM A351 CF8M	вору	CORPO	2
ASTM A351 CF8M	CLOSURE	CHIUSURA	ឩ
AISI 316	STEM	STEL0	2
AISI 316	BALL	SFERA	9
R.P.T.F.E.	SEATS	SEDI	8
P.T.F.E.	BODY GASKET	GUARNIZIONE CORPO	9
P.T.F.E.	WASHER	BUSSOLA	8
AISI 304	GLAND	PREMIGUARNIZIONE	9
MOD. RIO	EMERGENCY RELEASE GEAR	RIDUTTORE A SGANCIO	100
GAT S.E. 85 FAILURE CLOSE	PNEUMATIC ACTUATOR	ATTUATORE PNEUMATICO	5
6S UNI 3740	NUT/LOCK NUT	DADO/CONTRODADO	<b>±</b>
50CrV4 UNI 3545	SPRING WASHER	MOLLE A TAZZA	13
ASTM A105	TNIOL	SNODO	130
AISI 316	ANTISTATIC DEVICE	DISPOSITIVO ANTISTATICO	7
VITON	STEM O-RING	O-RING STELO	ជា
Fe 37 UNI 7070	ADAPTER PLATE	SUPPORTO	290
Mod. SCG551A001MS	SOLENOID VALVE	ELETTROVALVOLA	ង
Mod. WDC0217201RR/BT	вох	SCATOLA PORTA MICRO	65

### 06/07/12 06/97/12 06/97/12 BALL VÁLVE TYPE "ALFA 10 NF" REVISION ASSEMBLY DRAWING

ODL: 003720/2012

DN 25

¥ 8

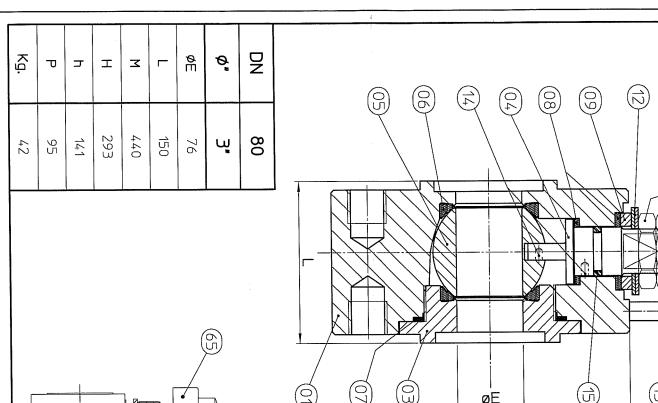
COMM. 2F11A/031

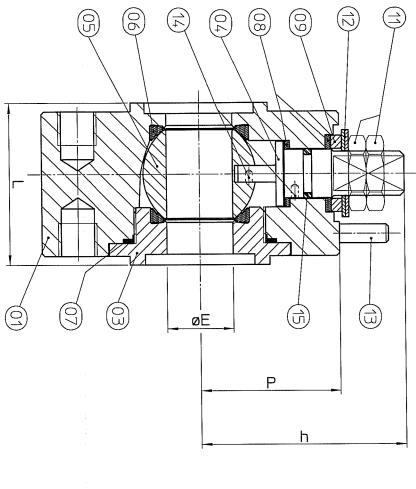
DATE

ANSI 150 RF + PNEUMATIC ACT. + DECLUTCHABLE GEAR BOX + SOLENOID VALVE + BOX S18176

DOPED REPORTED ON SWEED WITH OTHER PEPPLE WITHOUT MATERIAL AUTHORIZATION.

DN 25: KV 62.13





8

PREMIGUARNIZIONE

GLAND LEVER NUT/LOCK NUT SPRING WASHER STOP DEVICE

> Fe 37 UNI 7070 6S UNI 3740 50CrV4 UNI 3545

CF9SMnPb36 UNI 4838

LEVA

DADO/CONTRODADO MOLLE A TAZZA

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ARRESTO

DISPOSITIVO ANTISTATICO ANTISTATIC DEVICE

AISI 316

8.8 UNI 3740

O-RING STELO

SCATOLA PORTA MICRO

ВОХ

STEM O-RING

VITON

Mod. WDC0217201RR/BT

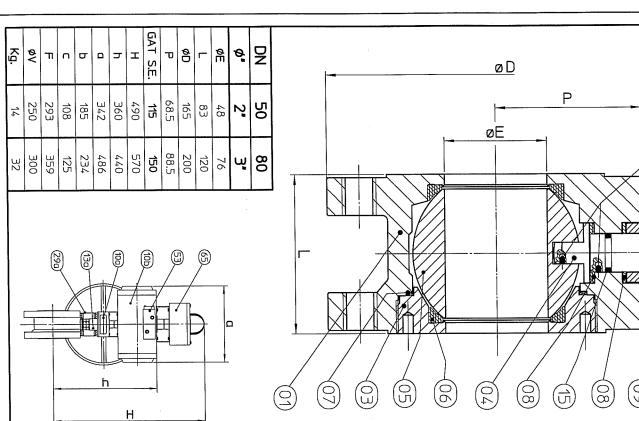
DN 80: HV 63.3A; HV63.3B.

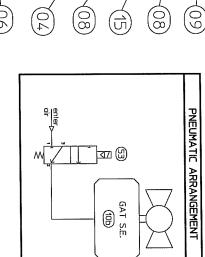
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		DESCRIPTION	04/0// 12	PREPARED		TE 310H.			:	PARTI	CORPO	CHIUSURA	STELO	SFERA	SEDI	GUARNIZIONE	BUSSOLA
		BAL	Minet	O./ /07 /17				•	CON	PARTICOLARE		₹A		-		ZIONE CORPO	A
	DN 8	L /\^	2 /2	APPROVED		7012			$\geq$								
1 7	OAN	LVE	 		REVISION	INDEX		_	2F1/	PART	BODY	CLOSURE	STEM	BALL	SEATS	BODY GASKET	WASHER
STATE ANTAR	DN 80 ANSI 600 L	BALL VALVE TYPE "ALFA 10	DRAWING	ASSEMBLY	2	C DATE SION.			COMM. 2F11A/031	NAME				i e		SKET	
S18  // S18  S18  S28 VALVOLE. AS PER LAWS IN FORCE THIS COP-IED REPRODUCTED OR SHARED WITH O' ALFA, VALVOLE WITTEN AUTHORIZATION.	F   B	LFA 10	       	BLY						MATERIALE	ASTM A105	ASTM A105	AISI 410	PLATING THK >35um	P.T.F.E. + A	P.T.F.E. + GI	P.T.F.E. + GI
S18188  // S18188  S18 18 FORCE THIS COUNCIL CAN HOT BE COVED REPRODUCTED OF SAMED WITH OTHER FEDRE WITHOUT ALEX PAUNOLE WITHOUT MACK PAUNOLE WAS PAUNOLE WITHOUT MACK PAUNOLE WAS P	OX DBAWING:	Ŧ		003720/2012		NOTE				l m				AISI 304+HARD CHROMIOM PLATING THK >35um	AISI 50%min	GRAF.	GRAF.

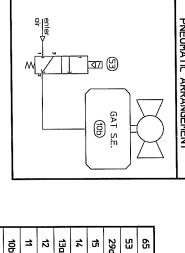
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	KV62.12	

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### DN 80:KV 62.8.

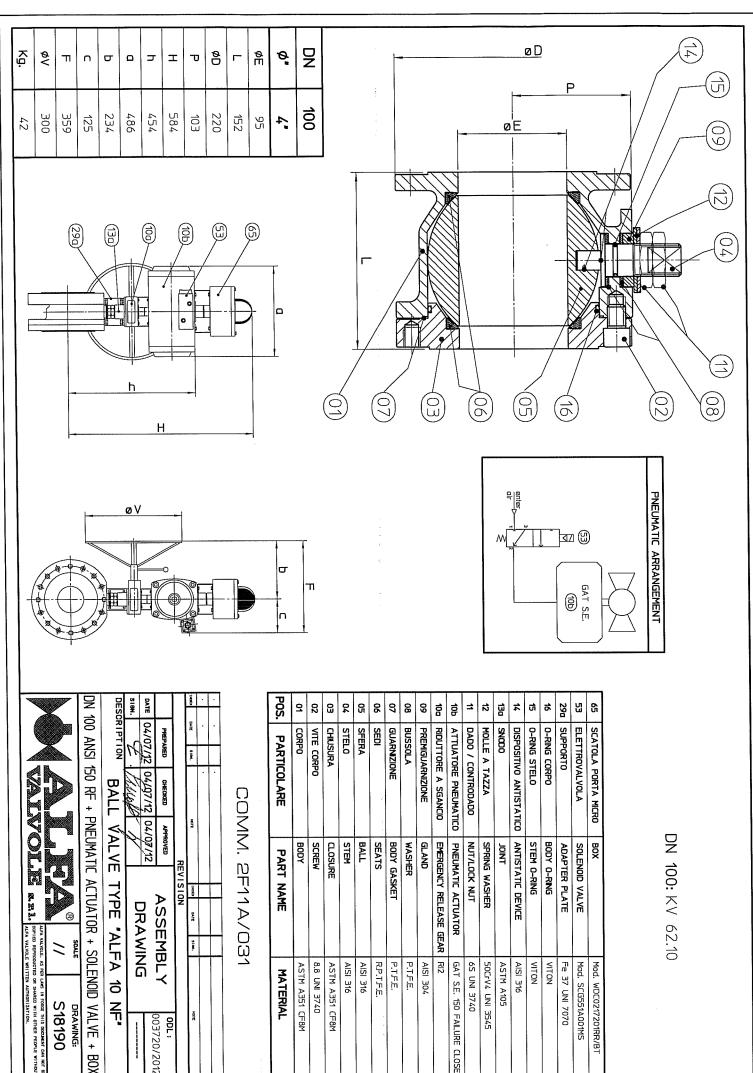
ſ	POS.	2	ឩ	\$		G	8	07	8	9	100	;	<b>1</b>	⇉	12	130	7,	5	29a	23	65
	PARTICOLARE	CORPO	CHIUSURA	STELO		SFERA	SEDI	GUARNIZIONE CORPO	BUSSOLA	PREMIGUARNIZIONE	KIDUTTUKE A SGANCIO		ATTUATORE PNEUMATICO	DADO/CONTRODADO	MOLLE A TAZZA	SNODO	DISPOSITIVO ANTISTATICO	O-RING STELO	SUPPORTO	ELETTROVALVOLA	SCATOLA PORTA MICRO
	PART NAME	BODY	CLOSURE	SIEM		BALL	SEATS	BODY GASKET	WASHER	GLAND	EMERGEINET MELEAGE GEAN	באבטבטאט מכן בעכב כבעם	PNEUMATIC ACTUATOR	NUT/LOCK NUT	SPRING WASHER	TNIOL	ANTISTATIC DEVICE	STEM O-RING	ADAPTER PLATE	SOLENOID VALVE	вох
and the second s	MATERIAL	ASTM A351 CF8M	ASTM A351 CF8M	DN 80: ASTM A182 F51	DN 50: AISI 316	AISI 316	R.P.T.F.E.	P.T.F.E.	P.T.F.E.	AISI 304	DN 80: RI2	DN 50: R11	GAT S.E. FAILURE CLOSE	6S UNI 3740	50CrV4 UNI 3545	ASTM A105	AISI 316	VITON	FE 37 UNI 7070	Mpd. SCG551A001MS	Mod. WDC0217201RR/BT

### COMM. 2F11A/031

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		SI 150 RF	SCRIPT	*.		PREPARED		DATE	04/07/12	25/07/12
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		NEUMATIC A	BALL V	Mot	25/07/12 25/07/12 25/07/12	CHECKED			FIRST ISSUE	STEM MATE
		CT. + DECL	ALVE T	1	25/07/12	APPROVED	R	MOIE		25/07/12 5, STEM MATERIAL UPDATED
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			m	l		>	ا≝	KBOKX	L	L
ALF.	Œ		¥.			ASSEMBLY	2	DATE		
A VALVOLE	>	SEATE SOX	>		<b>\(\)</b>	품		3104.		
ALFA VALYOLE, AS PER LAWS IN FORCE THI COP IED REPRODUCTED OR SHARED WITH C ALFA VALYOLE WRITTEN AUTHORIZATION		+ SOLEN	O NH	6	ล็	3LY				
ALEA VALVOLE, AS PER LASS IN FORCE THIS DOCUMENT CAN NOT BE COPYED REPRODUCTED OR SWAED WITH OTHER PEDYLE WITHOUT ALEA VALVOLE, WE ITTEN AUTHORIZATION.	S18189	ANSI 150 RF + PNEUMATIC ACT. + DECLUTCHABLE GEAR BOX + SOLENOID VALVE + BOX	DESCRIPTION BALL VALVE TYPE "ALFA 10 NF" DN 50 80		000,40,40	ODL:		HOTE		

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AISI 316 R.P.T.F.E. P.T.F.E. P.T.F.E. AISI 304 RI2

8.8 UNI 3740

ASTM A351 CF8M AISI 316

ASTM A351 CF8M

MATERIAL

VITON VITON Mod. SCG551A001MS Mod. WDC0217201RR/BT

Fe 37 UNI 7070

AISI 316

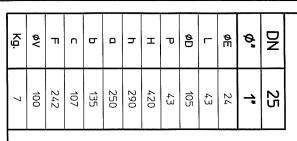
GAT S.E. 150 FAILURE CLOSE

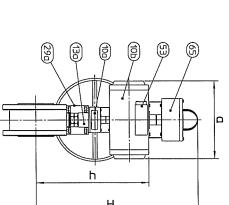
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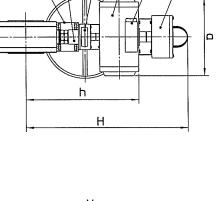
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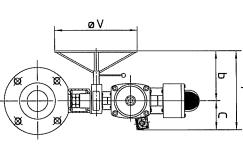
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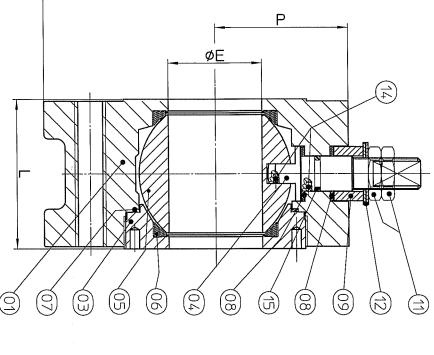
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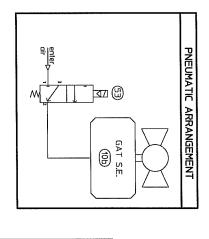








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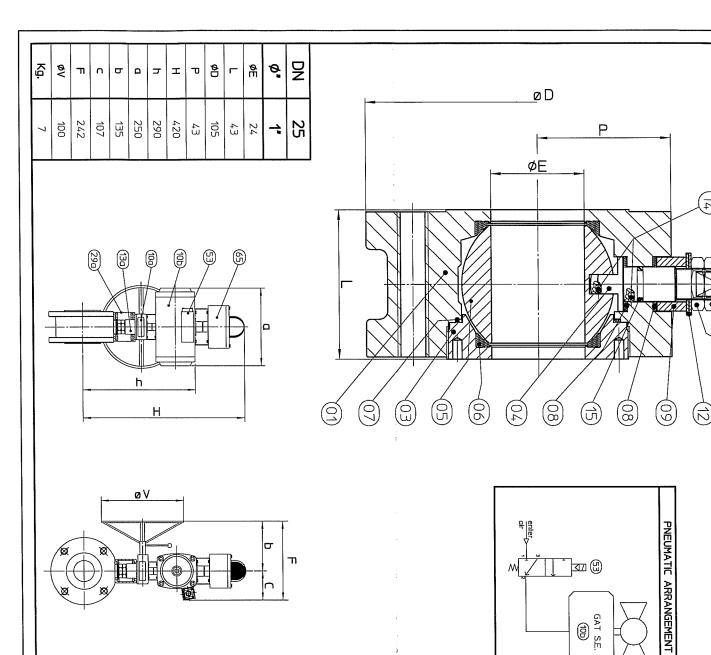


DN 25: TV63.1A; TV63.1B

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MATERIAL	PART NAME	PARTICOLARE	POS.
ASTM A216 WCB	BODY	CORPO	01
ASTM A216 WCB	CLOSURE	CHIUSURA	60
AISI 410	STEM	STELO	20
AISI 304	BALL	SFERA	20
P.T.F.E. + A.M.	SEATS	SEDI	8
P.T.F.E. + GRAF.	BODY GASKET	GUARNIZIONE CORPO	07
P.T.F.E. + GRAF.	WASHER	BUSSOLA	8
CF9SMnPb36 UNI 4838	GLAND	PREMIGUARNIZIONE	8
MOD. RIO	EMERGENCY RELEASE GEAR	RIDUTTORE A SGANCIO	ģ
GAT S.E. 85 FAILURE CLOSE	PNEUMATIC ACTUATOR	ATTUATORE PNEUMATICO	<del>0</del>
6S UNI 3740	NUT/LOCK NUT	DADO/CONTRODADO	⇉
50CrV4 UNI 3545	SPRING WASHER	MOLLE A TAZZA	12
ASTM A105	JOINT	SNODO	130
AISI 316	ANTISTATIC DEVICE	DISPOSITIVO ANTISTATICO	1,
VITON	STEM O-RING	O-RING STELO	ij
Fe 37 UNI 7070	ADAPTER PLATE	SUPPORTO	29a
Mod. SCG551A001MS	SOLENOID VALVE	ELETTROVALVOLA	ន
Mod. WDC0217201RR/BT	вох	SCATOLA PORTA MICRO	23

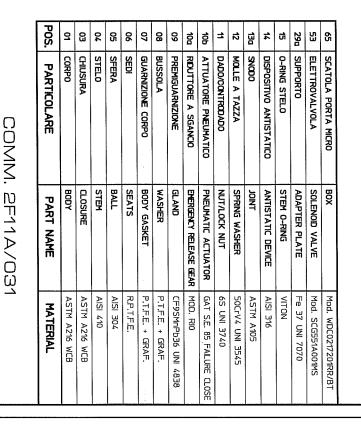
## COMM. 2F11A/031

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S18191	S	//							
DRAWING:	<u> </u>	SOALE	R						~
ANSI 150 RF + PNEUMATIC ACT. + DECLUTCHABLE GEAR BOX + SOLENOID VALVE + BOX	SOLENOID	80X +	LE GEAR	UTCHAE	\CT. + DECL	NEUMATIC /	쮸 + P	SI 150	₽
BALL VÁLVE TYPE 'ALFA 10 NF' DN 25	O NE	FA ′	E 'AL	ΗYΤ	VÁLVE	BALL		DESCRIPTION	므
		¥	DXX WING		11	Musto	F.	.¥	<u>x</u>
71.07.707.500			)		06/07/12	21/26790	21/70/90		DATE
ODL:	•	MB B	ASSEMBLY	/	APPROVED	CHECKED	PREPARED	39	
			Z	REVISION	20				
NOTE		3104.	DATE	ІКОХХ	моте		1 DH.	BLYD	X3O
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GAT S.E (3)



ansi 150 RF + PNEUMATIC ACT. + DECLUTCHABLE GEAR BOX + SOLENOID VALVE + BO: DESCRIPTION BALL VALVE TYPE "ALFA 10 NF" DN 25

ALFA VALVOLE WITTEN AUTHORIZATION.

S18192 DRAWING: 06/07/12

06407/12 CHECKCED

06/07/12 APPROVED

REVISION

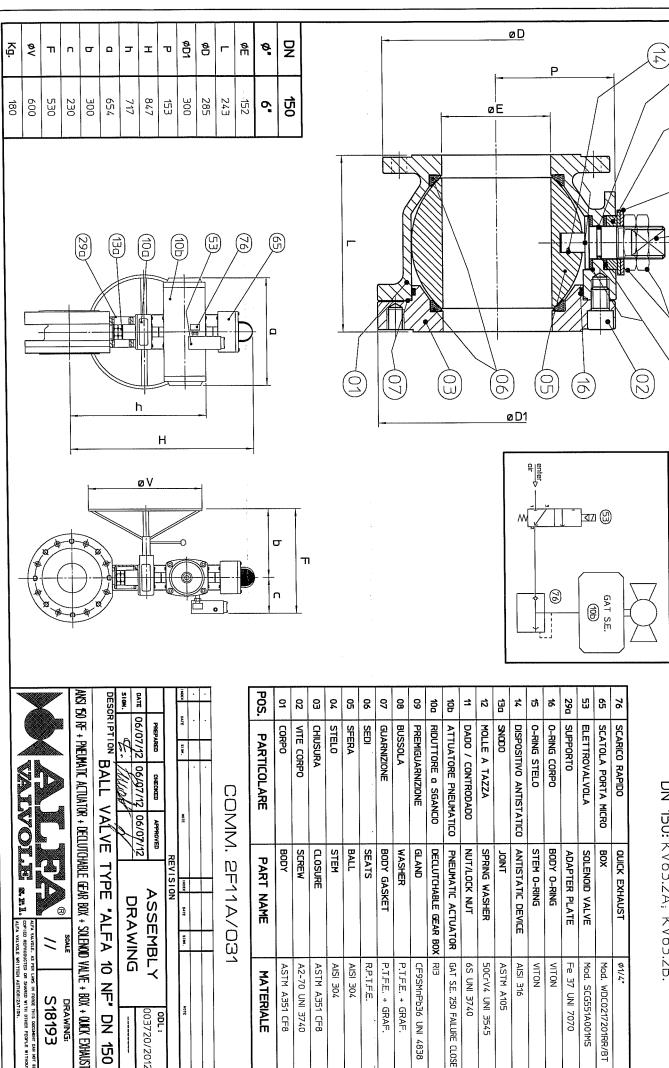
ASSEMBLY DRAWING

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PREPARED



REVISION

ASSEMBLY DRAWING

ODL: 003720/2012

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S18193

## DN 150: KV63.2A; KV63.2B.

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PNEUMATIC ARRANGEMENT

	POS.	으	22	G	20	G	8	07	08	90	10a	6	⇉	ಸ	햠	7	5	36	290	53	65	76
COMN	PARTICOLARE	CORPO	VITE CORPO	CHIUSURA	STELO	SFERA	SEDI	GUARNIZIONE	BUSSOLA	PREMIGUARNIZIONE	RIDUTTORE a SGANCIO	ATTUATORE PNEUMATICO	DADO / CONTRODADO	MOLLE A TAZZA	SNOOD	DISPOSITIVO ANTISTATICO	O-RING STELO	O-RING CORPO	SUPPORTO	ELETTROVALVOLA	SCATOLA PORTA MICRO	SCARICO RAPIDO
COMM. 2F11A/031	PART NAME	вору	SCREW	CLOSURE	STEM	BALL	SEATS	BODY GASKET	WASHER	GLAND	DECLUTCHABLE GEAR BOX	PNEUMATIC ACTUATOR	NUT/LOCK NUT	SPRING WASHER	JOINT	ANTISTATIC DEVICE	STEM O-RING	BODY O-RING	ADAPTER PLATE	SOLENOID VALVE	BOX	QUICK EXHAUST
	MATERIALE	ASTM A351 CF8	A2-70 UNI 3740	ASTM A351 CF8	AISI 304	AISI 304	R.P.T.F.E.	P.T.F.E. + GRAF.	P.T.F.E. + GRAF.	CF9SMnPb36 UNI 4838	RIJ	GAT S.E. 250 FAILURE CLOSE	6S UNI 3740	50CrV4 UNI 3545	ASTM A105	AISI 316	VITON	VITON	Fe 37 UNI 7070	Mod. SCG551A001MS	Mod. WDC0217201RR/BT	Ø1/4"



### **INDEX OF DOCUMENTS**

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Pag.	1 01 1

Customer: Cliente:	DESMET	BALLESTRA SPA	
Order n°:	121261	Order confirmation n° ( ODL ):	003720-12
Ordine n°:	COM.2F11A/031	Conferma d' ordine n° ( ODL ):	

Pos.	Documents general description  Descrizione generale documenti	Total nr. of pages Pagine totali
1	Valve test certificates and corresponding 3.1 raw material certificates  Certificati di collaudo delle valvole e relativi certificati 3.1 delle materie prime.	29
2	Declaration of Conformity according 97/23/CE "PED"  Dichiarazione di conformità alla 97/23/CE "PED"	1
3	Valves installation-operation-maintenance manuals  Manuali d' uso e manutenzione delle valvole	19

Total pages of this book / Pagine totali del documento :

nr. 53 pages, this index included nr. 53 pagine, compreso questo indice





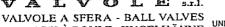
### CLIENTE:

### DESMET BALLESTRA SPA

P.O nr. 121261 COM.2F11A/031

Valve test certificates and corresponding 3.1 raw material certificates Certificati di collaudo delle valvole e relativi certificati 3.1 delle materie prime.













NR 1203720/21/0

VALVOLE A SFERA - BALL VALVES UNI EN ISO 9001:2008 ROBINETS À BOULE - KUGELHÄHNE Nr. 50 100 6417 Rev.01

CERTIFICATO DI COLLAUDO

INSPECTION CERTIFICATE

CEC-06 / 2037-ADF178 CE 0948-Modulo H Certificato nr. PED-0948-QSH-321-10 Directive 94/9/EC - Article 8 (1) b) ii)

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 i.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-meil: alfavalvole@alfavalvole.lt - www.alfavalvole.it

26/09/2012

DATA

Date

				UNI EN 10204 3.1.			
				1			
CLIENTE	DESMET BA	ALLESTRA SPA		VS. ORDINE	121261 Com.2F11A/031	DATA	29/05/12
Customer				Your order nr. MATERIALE	WCB	Date  QUANTITA'	1
DESCRIZIONE Description	VALVOLA A Ball Vaives			Material		Total Q.ty'	
TIPO Type	ALFA 10NF	DN 150 UNC	ANSI 150	MATRICOLEldentification Nr.	1209582	DISEGNODrawing	
AZIONAMENTO Operator	PNEUAMTI	C ACTAUTOR TYPE (	SAT250 SE +	SPECIFICA DI COLLAU  Test Specification	DO	API 6D/ISO1431 Procedure IOC 001 Rev.	
SIGLE tem	HV62.2						
			ELEN	ICO CERTIFICATI MAT	ERIALI		
		- 10111112121		Material Certificate List	CERTIFICATO NR		
PARTICOLARE Valve Part	MATERIALI Material	E QUANTITA NR. Total Q.ty Nr.	Raw Material le	ATERIA PRIMA DLNr (RML Nr)	CERTIFICATO NR. Certificate nr.		
CORPO Body	WCB	1	M2991		12124-000437-12-003		
CHIUSURA End	A105	1	M2814		6047		
SFERA Ball	CF8	1	M0600		2010040101-6		
Alfa Va Alfa vaivole	ilvole S.r.l. dichi e S.r.l. declares	ara che i prodotti e i ma that the products and t	ateriali dei com he material use	ponenti utilizzati sono co d for the Components a	onformi ai requisiti del vostro ordir re in conformity to order requirem	te,e al disegnì applic ents and Drawing a	cabili pplicable
PROVE IN PRESSIONE		VA IDRAULICA CORPO		ROVA IDRAULICA SEDI	PROVA PNEUMATICA SEDI		IATICA CORPO
Pressure Test		Body Hydraulic Test		Seats Hydraulic Test	Seats Pneunatic Test	Body Pnei	malic Test
PRESSIONE		30 bar	l	22 bar	6 bar		
Pressure		nimum Time 300s		inimum Time 300s	Minimum Time 300s		
FLUIDO	<i>+</i>	Acqua con inibitore di rugg			ARIA	ARI	
Floid	I	Water with 3% of rust in	oblibitor free of Clo	rine. Fosfate	Аiг	1 A	ir

ESITO PROVE Result FORNITORE Supplier

Valve Pressure

STRUMENTAZIONE

PRESSIONE VALVOLA

Testing apparatus



TIPO

Actuator Supply

PRESSIONE ATTUATORE

In accordo alla norma di riferimento

According to spec, reference

PROVE FUNZIONALI (A RICHIESTA) Functional Test (upon request)

> ISPETTORE CLIENTE Customer Inspector

MANOMETRO

Pressure Gauge

Positive Results ENTE DI COLLAUDO Inspection Agency

227,97

0+10 bar

COPPIA MISURATA

Torque measurement

Esito Favorevole

0+40 bar

67944 23-2010

PRESSIONE

Pressure

MATRICOLE

Identification Nr.

ESAME VISIVO E DIMENSIONALE

Visual and Dimensional Test

MISURAZIONE COPPIA DI MANDVRA (A RICHIESTA)

Torque measurement (upon request)

### Material Inspection Certificate according to EN10204 3.1

Cert.No.:

12124-000437/12-003

Stamp of QA Dept.

								Certi			24-UUU4		
Customer:	er e	ALF	A VAL	OLE S	.R.L		Sheet an	umber:				ages:	:::: <mark>:</mark> ].∀ ;
Manufacturer:	SUZHO	OU SIP	STARD	VALV	E COT	TD.	P.O. Nu	mber:		000437/			
NO.2# Changsh	eng Roa	d,Sheng	pu IND.	Zone,Su	zhou IN	D.Park	Invoice	No.:		STD121	24ALF	4	
Material Grad	e:	ASTM	A216-W	'CB	,		Date of	Issue:		June 20.	, 2012		
Item:	BODY A	10/A64/	A68 UNI	DRILLEI	DN150		Total Q	ty.:	7	7	Mark:	AL	FA
Heat Number:	JS0970	JS2588	JS2589	JS2590	JS2592	JS2593	JS2594	JS2596	JS2597	JS2598	JS2599	JS2600	
						cal Ana					·····		
Heat No.	Qty.	CE	C%	Si%	Mn%	P%	S%	Cu%	Ni%	Cr%	Mo%	ν%	Nb%
JS0970	4	0.364	0.195	0.438	0.888	0.020	0.009	0.014	0.014	0.064	0.028	0.002	
JS2588	5	0.362	0.204	0.399	0.850	0.017	0.010	0.020	0.016	0.050	0.017	0.003	
JS2589	4	0.375	0.201	0.428	0.050	0.017	0.012	0.015	0.016	0.069	0.030	0.002	
JS2590	2	0.379	0.204	0.413	0.947	0.021	0.009	0.013	0.013	0.050	0.023	0.002	
JS2592	2	0.374	0.206	0.444	0.862	0.019	0.013	0.020	0.023	0.082	0.023	0.004	
JS2593	9	0.400	0.217	0.427	0.987	0.023	0.012	0.017	0.015	0.054	0.026	0.002	
JS2593 JS2594	1	0.400	0.217	0.380	0.851	0.020	0.015	0.019	0.019	0.068	0.031	0.002	
JS2596	2	0.353	0.190	0.504	0.882	0.019	0.013	0.020	0.018	0.042	0.025	0.002	
JS2590 JS2597	1	0.406	0.190	0.425	0.929	0.013	0.020	0.020	0.018	0.082	0.030	0.003	
	2	0.360	0.200	0.408	0.867	0.020	0.014	0.017	0.018	0.041	0.024	0.002	
JS2598	1	0.360	0.200	0.408	0.810	0.020	0.010	0.017	0.021	0.098	0.024	0.003	
JS2599	4	0.374	0.211	0.464	0.959	0.013	0.020	0.038	0.050	0.074	0.032	0.005	
JS2600	<u> </u>		·		<u> </u>	ASTIM	<u></u>	10.036	·	t test as	<u> </u>	ASTIM	Δ370
Mechanical P				Test a		uction		gation		dness		t Value	
Heat No.		ield	i i	nsile ·			į.	_		nnell	1111/111		
		(Ipa)		lpa)		ea (%)		<u>%</u> 29		47	<del> </del>	(J)	
JS0970		320		15		52		29 25		59		+ =	
JS2588		340		40		46		25 25		60			
JS2589		335		45		45		23 26		52			
JS2590		315		10		47 50		29		50		-	
JS2592		300		05		50		27 27		151			+
JS2593		310		05		49 47		27 28		155		<del>                                     </del>	
JS2594		320		25				26 26		59	<del>                                     </del>		
JS2596		330		540		49				150	_		
JS2597		305	_	00		50		30		156		_	<del> </del>
JS2598		305		515		48		29					
JS2599		320		520		49		28		152			
JS2600		300		510		48		27	_l	152	1111		
Dimer	nsional I	<del></del>	1			Visual	Inspection	<u> </u>		-		ie Inspec OK	(1011
	OK						ок						
Technical Re	-				ASS	ICURA:	ZI,ONE (	OUALIT.	A¹ RMI.		mp or Q	A Mana	ger
Normalized		C, 2 hou	rs minin	iuiti,	N.A.	4 4				1			
cooling in		. 40	0.00.55			気やり	VOLE	ord	M2991				
• Casting pro		•			COP	IA COI	<b>VFORM</b>	E ALL'	ORIGIN.	ALE			
Melting Pro				natina	COP	Y COMF	LYING I	WITH TH	HE ORIG	IIVAL			
Remarks: B	-										TV	ann	0
<ul> <li>Casting pro</li> <li>Casting pro</li> </ul>		•			/ፒሚ-ነን ነብ	۱n		ALM: 44 MILL 1000000 174 N			()'		
Works Insp							d surface	of ever	v	1			
piece of ca		ւայրի 200	oute og i	nai keu (	JI 11UUT	Hacillic			J				
NACE ME	_	/ ISO 15	156										
INVACE IVIII	V 01-13 /	190 13	טני								Stamn	of OA D	ent.

Material Inspection Certificate according to EN10204 3.1 Cert.No.: 12124-000437/12-003 Customer: ALFA VALVOLE S.R.L. Sheet number: 2 Total pages: 3 Manufacturer: SUZHOU SIP STARD VALVE CO.LTD. P.O. Number: 000437/12 NO.2# Changsheng Road, Shengpu IND. Zone, Suzhou IND. Park Invoice No.: STD12124ALFA Material Grade: ASTM A216-WCB Date of Issue: June 20, 2012 BODY A10/A64/A68 UNDRILLED DNI50 Item: Total Oty.: 77 Mark: ALFA Heat Number: JS2602 JS2603 JS2604 JS2605 JS2607 JS2608 JS2609 JS2611 JS2612 JS2613 JS2614 JS2615 Chemical Analysis Heat No. Qty. CE C% Si% Mn% P% **S%** Cu% Ni% Cr% Mo% V% Nb% JS2602 2 0.383 0.223 0.418 0.851 0.020 0.013 0.014 0.020 0.051 0.025 0.001 JS2603 0.379 1 0.214 0.400 0.834 0.021 0.016 0.039 0.043 0.071 0.030 0.003 JS2604 10 0.387 0.224 0.438 0.882 0.017 0.014 0.032 0.017 0.043 0.020 0.002 JS2605 2 0.396 0.213 0.441 0.989 0.023 0.014 0.022 0.023 0.044 0.029 0.002 JS2607 3 0.396 0.213 0.441 0.989 0.023 0.014 0.022 0.023 0.044 0.029 0.002 JS2608 3 0.363 0.192 0.416 0.923 0.017 0.012 0.029 0.0210.042 0.024 0.002 JS2609 1 0.381 0.218 0.410 0.893 0.017 0.011 0.018 0.015 0.033 0.023 0.002 JS2611 i 0.372 0.212 0.413 0.864 0.018 0.012 0.023 0.022 0.039 0.025 0.002 JS2612 1 0.379 0.209 0.403 0.911 0.017 0.014 0.025 0.034 0.043 0.028 0.002JS2613 3 0.354 0.199 0.385 0.846 0.016 0.009 0.022 0.017 0.035 0.021 0.002 JS2614 3 0.389 0.215 0.386 0.843 0.018 0.015 0.039 0.052 0.086 0.045 0.005 JS2615 2 0.375 0.208 | 0.392 0.890 0.017 | 0.011 0.032 0.033 0.043 0.028 0.002 Mechanical Property: Tensile Test as per **ASTM A370** Impact test as per ASTM A370 Heat No. Yield Tensile Reduction Elongation Hardness Impact Value at 20 °C (Mpa) (Mpa) of Area (%) % Brinnell (J)JS2602 325 520 28 49 156 JS2603 305 500 48 30 153 JS2604 310 515 49 30 150 JS2605 310 495 49 30 151 JS2607 305 500 49 30 150 300 JS2608 490 50 31 149 JS2609 320 535 46 27 157 JS2611 310 510 46 27 153 JS2612 315 520 49 28 154 JS2613 310 490 47 30 151 JS2614 325 530 46 28 156 JS2615 300 515 50 151 **Dimensional Inspection** Visual Inspection Hydraulic Inspection OK OK OK

Technical Requirement

- Normalized to 930°C, 2 hours minimum, cooling in air
- Casting produced as per MSS-SP-55
- Melting Process: Induction Furnace
- Remarks: By lost-wax investment Casting
- Casting produced as per ASME B16.34
- Casting-produced-as-per-AD-Merkblatt-W0-/-TR-D100-
- Works Inspector's stamp should be marked on non-machined surface of every piece of casting
- NACE MR 01-75 / ISO 15156

Stamp of QA Manager

COPIA CONFORME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL

ASSICURAŢIQNE QUALITA' RML NA

Stamp of QA Dept.

### Material Inspection Certificate according to EN10204 3.1

Cert.No.:

12124-000437/12-003

								Cert.	No.:	121	24-0004	437/12-	003
Customer:		ALF	A VAL	VOLE S	.R.L	Say / E	Sheet n	umber:	n 1575 in 3	}-;r====================================	Total p	ages:	s::.3
Manufacturer:	SUZHO	OU SIP	STARE	VALV	E CO.I	TD.	P.O. Nu	ımber:		000437	/12		
NO.2# Changsl	eng Ros	d,Sheng	pu IND	Zone,Sı	zhou IN	D.Park	Invoice	No.:		STD12	124ALF	A	
Material Grad		ASTM					Date of			June 20	, 2012		
Item:		10/A64/			D DN 150	)	Total C			7	Mark:	ΑI	ΓA
Heat Number:							I x otal Q	2 - 3 - 4	·		1		•
Heat Number:	J32010	195017	125030	127091									
	<u> </u>		<del></del>			cal Ana	<del>,"</del>	Γ.	I		1	l	<del> </del>
Heat No.	Qty.	CE	C%	Si%	Mn%	Р%	S%	Cu%	Ni%	Cr%	Mo%	V%	Nb%
JS2616	<u> </u>	0.380	0.217	0.425	0.871	0.019	0.014	0.020	0.021	0.050	0.023	0.001	
JS2617	1	0.367	0.205	0.354	0.875	0.021	0.013	0.018	0.018	0.038	0.029	0.001	
JS2636	1	0.371	0.188	0.457	0.917	0.016	0.012	0.022	0.017	0.100	0.034	0.002	
JS2687	4	0.350	0.192	0.398	0.851	0.017	0.010	0.016	0.014	0.045	0.024	0.002	
JS2690	1	0.387	0.222	0.395	0.851	0.020	0.014	0.031	0.021	0.072	0.022	0.003	<u> </u>
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		<u> </u>	<u> </u>						<del> </del>	<del> </del>	<del> </del>		<del> </del>
20 1 7 17	<u> </u>	L		<u></u>	<u> </u>	A CONN #		<u> </u>	T	1 * *		4 C70 N/I	A 770
Mechanical Pr	<del></del>		· · · · · · · · · · · · · · · · · · ·	Test as	•	ASTM			<del></del>	t test as		ASTM	
Heat No.	1	ield	į.	nsile	1	uction		gation	1	dness	Impac	t Value	nt 20 C
	<del>-  </del>	lpa)	<u> </u>	Ipa)	+	ea (%)		%	-	nnell		(J)	<u> </u>
JS2616	3	15	5	20	4	48		29		54			
JS2617	3	20	5	35		50		27	1	53			<u> </u>
JS2636	3	20	5	00		47		27	1	51			
JS2687	3	25	5	10	1	47		27	1	55	<u> </u>	_	_
JS2690	3	00	4	90		52		30	1	50		_	
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D'	<u> </u>			1	<u> </u>	3/21	1			<del>- 1</del>	<u>l</u> Hydrauli	a Lacana	tion
Dimen	sional In	spection		_			Inspection	)11				OK	11011
	OK						OK						
Technical Red	-				ASSICL	JRAZI	NE QU	ALITA' I	RML Nr.	Star	mp of Q	A Iviana	ıger
<ul> <li>Normalized</li> </ul>		c, 2 hour	s minim	um,		AT		<b>6</b> 1	12991				
cooling in a						VALV	QTE	L		<u></u>			
<ul> <li>Casting prod</li> </ul>		-			COPIA	CONF	PRME	ALL'OF	RIGINAL	<b>A</b> ,		***	
<ul><li>Melting Pro</li></ul>					COPY	COMPLY	ING WI	in inc	ORIGIN	'A'L			5.
Remarks: B				_							-/	ا المام مرید المام المام	2
<ul> <li>Casting prod</li> </ul>		•									# ()Y.0		 
• Casting prod		•										· · · · · · · · · · · · · · · · · · ·	
<ul> <li>Works Insper</li> </ul>	ector's st	amp sho	uld be n	narked o	n non-m	achined	l surface	of every	<b>y</b>		等核 6		
piece of ca	sting										···• .		-
<ul> <li>NACE MR</li> </ul>	01-75/	ISO 151	56										
I											Stamp	of QA Do	ent.



AZIENDA CON SISTEMA DI GESTIONE PERLA DITALITÀ	CERTIFICATO DA DNV	QUALITY SISTEM	CERTIFIED DNV
Certificato di Collaudo / Mill Test Certificate	Data / D0/10/10 Date 10/10/10		EN 10204 3.1

	**************************************						
Cliente / Custamer 13186 - STEEL SPA		Nostra conferman./Our.confirmation.no. riga / position 801	riga / position	Ordine cliente n. / Customer order no. D.D.T. N. / Delivery note 1466/2010	rorder no. D.	D.D.T. N. / Delivery note Data / Date	5827 14/06/10
VIA COLOMBO, 21 29010 - SARMATO (PC) Italy		Colata n. / Heat no. 11588	Stato di fornitura Materiale / S FORGIATO TONDO	Stato di fornitura Matertate / State of supply material FORGIATO TONDO	la)	A.S.	
Norma Specifica /Standard ASTM	Accialo / Steel grade ASTM A 105	Scheda / Sheet	Dimensioni (mm) / Size (mm)	02	Pezzi / Pieces	Massa Teorica / Theorical mess Tn 10,500	Theorical mass Tn 10,500

Acciaio completamente calmato prodotto con fusione in E.A.F.- Affinazione in E.A.F.- Affina

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	ö	0,220
	Min Si	1,010
	ပ	0,190 1,010 0,220 0,007 0,006 0,090 0,290 0,030
	Analisi chimica % / Ladie analisys %	Valore / Value

ASSICURAZIONE QUALITA' RIML Nr.

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COPY COMPLYING WITH THE ORIGINAL

48 44 32

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RM ltmm<sup>±</sup> 502

CARATTERISTICHE MECCANICHE

| Preparato controlio qualità / Preparad gyality con

Ente collaudatore / Inspector

Verificato responsabile controllo qualità / Verified quality control manager

Vorona Statel Sp.A. Vio Balori 22 - 17050 Valiese di Opposno (Vorona) - Italy - 781, +39 045 8997900 - Fox +39 0458997915 - www.veronasteel.su - Info@voronasteel.su - C.F.R.L. VR, P.I. 0281087 023 4 - C.C.I.A.A. di Verona R.E.A. 265265 - Cap. Soc. 20.000.000,00 l.v.m Società seggetta ed attività di Directone e coordinamente di STEEL INVEST & FINANCE (LOUXEMBURG) SA, 12 Rue Lèon Thyra, L-2636 Lussamburgo. Iscritta presso il Registra dei Commercio e dello Società dei Lussamburgo al nr. 882518, Codica Fiscale B8131876170

Doc No. 2-15 Annex22 PURCHASER: STANDARD: PRODUCT:

AF-100030

PrEN12266-1

**Anson Flow Corp** 

Material Test Certificate According to EN 10204 3.1

P/O NO.: DATE:

000160 rev.0 2010/04/01

2010040101-6

CERTIFICATE NO.:

INSP.RESULT MATERIAL

ASTM A351 CF8

7F-2,No.408, Sec.2,Nantun Rd Taichung, Taiwan(R.O.C.)

מד. אניים מיי.													ŀ		4			. 7
NOMINAL							VISUAL &	4 8	SHEL	SHELL TEST	BACK	BACK SEAT TEST	EST.	PENETRATION	ATION	HEAT	HEAT TREATMENT	<u></u>
PRESSURE		ប៊	SIZE	άTΥ	HEA	HEAT NO.	DIMENTIONAL	TONAL			₹	AIR TEST		RADIOGARPHIC	RPHIC	SYIV	SYMBOL, TEMP.	
				PCS			INSPECTION	CTION	(BAR	(BAR/SEC)	<u>e</u>	(BAR/SEC)		EXAMINATION	ATION	<b>∞</b>	& DURATION	4,574
1	<u> </u>	á	DN25	15,448	8	٥	GOOD	8	_	NA		NA		AN		SEE HEAT TI	SEE HEAT TREATMENMT PRPORT	PRPORT
	<u> </u>	N O N	DN150	288	°	NO	G005	8		NA		NA		NA		SEE HEAT TI	SEE HEAT TREATMENMT PRPORT	PRPORT
•		O	DNZOO	120	0	OP	G005	00	4	NA		NA		NA		SEE HEAT TI	SEE HEAT TREATMENMT PRPORT	PRPORT
	_										-				٠			
MATERIAL	<del> </del>	ပ	ច	Mn	n,	ຜ	ï	ပ်	Mo	TS	Яр	Кр	Elo.	Hardness				
CHARGE NO.		%	%	%	%	%	%	%	%	N/mm <sup>2</sup>	N/mm <sup>2</sup> N/mm <sup>2</sup>	N/mm <sup>2</sup>	%	(HB)		Impact Test (J)	est (J)	
											In 0.2% in 1.0%	n 1.0%						
<del>!</del>	٠	≤0.08	≤2.00	≤1,50	≤0.040	≤0.040	≤0.040 ≤0.040 8.0-11.0	18.0-	≥0.50	≧485	≥205	NA	≥35	>135	1	2	3	Σ/3
go	<del></del>	0.039	0.470	1.090	0.039	0.0030	8.250	18.210	0.120	512	238	NA	39	170	-	t	ŀ	1
NO	1	0.045	0.460	1.010	0.032	0.0020	8.270	18.690	0.140	515	234	NA	38	174	1	1	ŀ	1
ОР		0.046	0.405	1.150	0.031	0.0048	8.120	18.380	0.165	516	235	NA	39	174	1	1	ı	1
	۲													_		_		

WE HERE BY CERTIFY THAT THE PRODUCT DESCRIBED HERE IN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESUETS SHOWN HERE IN ARE CORRECTLY TRANSFERRED FROM ORIGINAL

NSPECTION RECORDS.

HEAT TREATMENT:

CFBM/CF3M/CF8/1.4409/1.4308/1.4552/1.4581; Solution annealed to 1050-1100°C, 1.4408; Solution annealed to 1080-1150°C, 2 hours minimum and quenched in water. WCC: Normalized to 930°C, 1.0619: Normalized to 900-980°C, 2 hours minimum. Cooling in air. Stress relief to 650°C, 2 hours minimum. Cooling in air.

ADD HOLL ROSS Q.A REPPESENTATIVE

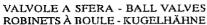
dustance.

ののの Nantun Rd., Taichung, Taiw

TEL.: 386-4-2472-6991

COPY COMPLYING WITH THE ORIGINAL COPIA CÓNFORME ALL'ORIGINALE ASSICURAZIQINE QUALITA' RML Nr. M0600









**CERTIFICATO DI COLLAUDO** 





NR 1203720/41/0

ROBINETS À BOULE - KUGELHÄHNE

UNI EN ISO 9001:2008

Nr. 50 100 6417 Rev.01

Certificato nr. PED-0948-QSH-321-10

Directive 94/9/EC - Article 8 (1) b) ii) UNI EN ISO 9001;2008

CE 0948-Modulo H

CEC-06 / 2037-ADF178

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1,560.000,00 i.v. - Tel. 0290296206 r.a. - Fax 0290295292 E-mail: alfavalvole@alfavalvole.it - www.alfavalvole.it

26/09/2012

DATA

Date		***************************************	IN	SPECTION CERTIF UNI EN 10204 3.				
CLIENTE Customer	DESMET BAL	LESTRA SPA		VS. ORDINE	121261 Co	m.2F11A/031	DATA	29/05/12
DESCRIZIONE Description	VALVOLA A S	SFERA		MATERIALE Material	A	105	QUANTITA'	2
TIPO Type	ALFA 10HP	DN 80 UNC	ANSI 600	MATRICOLE Identification Nr.	120	09583	DISEGNO Drawing	- · · · · · · · · · · · · · · · · · · ·
AZIONAMENTO Operator SIGLE	BOX Mod.WD	C0217201RR/BT		SPECIFICA DI COLI Test Specification	LAUDO 		API 6D/ISO14313 Procedure IOC 001 Rev.6	
ltem	HV63.3A, HV6	33.3B						
			ELEN	CO CERTIFICATI N				
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q ty Nr.		ATERIA PRIMA	CERTIFICATO	NR.		***************************************
			Raw Material lo	LNT HML NI)	Certificate nr.			***************************************
CORPO Body	A105	2	H7F48		6998			
CHIUSURA End	A105	2	M1039		06-888782			
SFERA Ball	CFB	2	M1749		424			
Alfa Va Alfa valvote	Ivole S.r.l. dichiara S.r.l. declares tha	a che i prodotti e i mater at the products and the i	riali dei comp material user	onenti utilizzati sono	o conformi ai requisiti s are in conformity to	del vostro ordino order requireme	e,e ai disegni applica ents and Drawing ap	abili plicable
		N-14						
ROVE IN PRESSIONE		i IDRAULICA CORPO dy Hydraulic Test		OVA IDRAULICA SEDI ieats Hydraulic Test		UMATICA SEDI eunatic Test	PROVA PNEUMA Body Pneum	
RESSIONE		153 bar		112 bar	6	bar		
Pressure		num Time 120s		nimum Time 120s		Time 120s		
LUIDO	Acc	ua con inibitore di ruggine Water with 3% of rust inhibi			· · ·	ARIA Air	ARIA Air	
TRUMENTAZIONE		TIPO	MANOMETR		MATRICOLE	VII.	3002	0+250 bar
esting apparatus		Туре	Pressure Gaug		Identification Nr.		0+10 bar	M57385
	PROVE FUNZIONA				MISURAZIONE CO	PPIA DI MANOVRA	(A RICHIESTA)	····

FORNITORE Supplier

Result

Valve Pressure

ESITO PROVE

PRESSIONE VALVOLA



Functional Test (upon request)

PRESSIONE ATTUATORE

In accordo alla norma di riferimento

Actuator Supply

ISPETTORE CLIENTE Customer Inspector

ENTE DI COLLAUDO Inspection Agency

COPPIA MISURATA

Torque measurement

Esito Favorevole

Torque measurement (upon request)

PRESSIONE

ESAME VISIVO E DIMENSIONALE

Visual and Dimensional Test

		3	en george e.	Delivery condition: HOT ROLLED	Weight(INT)           Cross         Net           4.28         4.30		D1		Macrostructure Index	<b>23</b> 2			lasiyector's (Chin)	RI. Co. S. No.34	· Paginga
	Customer	Purch. Order No	Active Mutifier	Slaudard and specification: Delivery HOT RO	No. of buadles   No. of bars per (fics)   bindle (fics) 14 ·   12	A1 0.038	HARDNESS J.B		Grain Size	H I		6.58:1 Color marking:	Signature:		· • •
	QUALITY CERTIFICATE (EN 10204-3.1)	Date 07.06.2006 Pure	<b></b>	Description of Goods: Coxt, Round bars	Steel Grade Diameter(	Ni Co Mo V NB 0.02 0.03 0 0 0 0	Elongation, A Reduction of Area, Z Impact Strength (95) (56) 44			Т	ture in air.	Reduction flatio:	<b>SH</b> C	OUALITA' HEAT Nr.	COPIA COMPORME ALL' ORIGINALE
	DVAKO QUALITY	8659 No. 65998	Ovako Sizel AB SE-813 82 Hofors Sweden Fax DI 46 8 622 13 28 Mig. Contract No 801880/2 Phone DI 46 290 25 000 Order N <sup>®</sup> 2006-669841	Production process: Electric Are Furnes, Fine Grain. Fully Killed, Aluminum and Calcium-Silicon Treated, Bottom Ingol Ilot Ralfed, Annealed, Carbon Steel, Rough Turned, Round Bars, Machine Straighteaed, Ultrasonically Tested for Sound Internal Centers.	Bondle Nº Heal Nº 459,454,462 P710503	C Ma Si S P Cr   Cr   0.19 1.05 0.21 0.025 0.020 0.02   Cr   Cr   Cr   Cr   Cr   Cr   Cr   C	Tensile Strength (N/max7) S10		Non-metallic inclusions (acc. l'o ASTM E45-97/Mettod A) A B	#	Remarks Heaf Treatment of samples: Reating to 8601C, Conling to room temperature in nir.	rec from mercuty. Free from any Radioaclive Contamination to weld or repair statement		ASSICURAZIONE QUALITÀ'  ASSICU	COPIA COMEO
Z0/1		-	Ovako Sloci AB SE-813 8 Fax - 00 46 8 622 13 28 Phone 00 46 290 25 000		RW-CAR N°   625,638,614		Test Temperature (°C)	End-Quench Test for Anridensbillty	_17.19	6298862		Free from mercury. Free from	Marie in Sweden	<b>4002/2</b> 1.	/TT



## QUALITY CERTIFICATE (EN 10204-3.1)

Date

06/888782

ž

Customer	
Purch, Order No	28326
Poference Mumber	



Ovako Steel AB SE-813 82 Hofors Sweden Fax 00 46 8 622 13 28 Phone 00 46 290 25 000

801880/2 2006-659225 Mfg. Contract No Order N°

Production process: Electric Arc Furnace, Hot Rolled, Annealed Ultrasonically Tested	Production process: Electric Arc Furnace, Fine Grain. Fully Killed, Aluminum and Calcium-Silicon Treated, Bottom Ingol Cast, Hot Rolled, Annealed, Carbon Steel, Rough Turned, Round Bars, Machine Straightened, Ultrasonically Tested for Sound Internal Centers.	on Treated, Bot traightened,	tom Ingol Cast,	Description of Goods: Round bars		Standard and specification:		Delivery condition: HOT ROLLED	
		.12		Dimensions	818	No. of bundles	to, of bundles No. of bars per	Weight(MT)	(IMT)
RW-CAR N"	Bundle Nº	Heat N*	Steel Grade	Diameter(mm)	Length(-)	(bcs)	bundle (pcs)	Gross	
625,638,614	459,454,462	920123	ASTMA105	150		14	12	4.28	,

4.30 Zec

Chemical Composition, %

2			-		r		-				
Si Cr Nr	ב	ž	-	CIE	Mo	- >	NB	۸I			
0.21 0.022 0.021 0 0	0 0	0		0	0	0	0	0.026			
ensile and Impact Test on Heat Treated Samples.*											
Yicld Point Tensile Strength Elonga	Elonga	longa	Elongation, A	Reduc	Reduction of Aren, Z	Impact Strength	trength		HARDNESS HB	D.I.	
(N/mm²) (N/mm²) (%)	%)	%)	,		(%)		**		•		
280 485 26	26	56			53				144		
ad-Quench Test for Hardenability											
						_				ş.	

facrostructure Index									
Mucrost		Y							
Grain Size									
	a	н			-	-			
		H							
	<b>C</b> )	H	-						
		T							
fethod A)	B	Н							
'M E45-97/Method						70070			
ns (sec.t'o AST	A	н				TO CONTRACT OF THE PARTY OF THE			
Non-metallic inclusio		L				1			

Remarks Heat Treatment of samples: Heating to 860°C, Cooling to room temperature in air.

Free from mercury. Free from any Radioactive Contamination No weld or repair statement

Made in Sweden

M1039

ASSICURAZIÓNE QUALITA' RML Nr.

WELLEGIBLE STREET RI. Co. S No.34

Inspector's (slight

Signature:

Joior marking:

Reduction Ratio: 6.58:1

ON THE STATE OF TH

COPIA COMFORME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL

# HAITIMA CORPORATION

Invoice No.: EX 0424/11

Contract No.: P.O. 001771 REC.

Messres. ALFA VALVOLE S.R.L.

MATERIAL TEST CERTIFICATE

ACC. TO EN 10204 3.1

8F, No. 201, Tiding Blvd. Sec. 2, Neihu Area Taipei 114 Taiwan DATE: May. 30, 2011 Type: ASTM A351-CF8 WA'TER COOLING 2268 pcs Remarks + DN80 以 恕 毲 1hr/in 游: Holding Holding Temp 瑕 Holding Time 製 1080-1100°C holding temp z Solution Annealed  $\ddot{c}$ Treatment Heat Treatment: 0.5以下 MAX 0.257 Ψo 8.0~11.0 | 18.0~21.0 18.14 HARDNESS MAX (HB) 183 164 ប៉ Chemical Composition % REDUCTION OF AREA Ź 0.04以下 0.04以下 TENSILE | YTELD STREWSTIFF ELONGATION Mechanical Test (ASTM A370) MAX ≥35 0.0138.5 % STRENGTH 0.2% OFFSET ≥ 205 MAX 0.026 Mpa 214.5 1.5以下 ≥485 MAX Mpa 500.5 Mn 1.01 2.0以下 12.5mm MAX 66.0DIA 12.5 SPEC 0.08以下 GAUGE 50mm MAX LENGTH 0.052 20 SPEC ELEMENT нелт сори ОЈ EAT CODE 0.

ASSICURAZIONE QUALITA' RML Nr. M1749

COPIA CONÉDRME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL

Hanson Cher

QA MANAGER:











VALVOLE A SFERA - BALL VALVES ROBINETS À BOULE - KUGELHÄHNE Nr. 50 100 6417 Rev.01

UNI EN ISO 9001:2008

CERTIFICATO DI COLLAUDO

CE 0948-Modulo H

CEC-06 / 2037-ADF178 Certificato nr. PED-0948-QSH-321-10 Directive 94/9/EC - Article 8 (1) b) ii)

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1,560.000,00 i.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-mail: alfavalvole@alfavalvole.lt - www.alfavalvole.it

26/09/2012

DATA

DATA Date	<u>26/09/2012</u>			ISPECTION CERTIFIC UNI EN 10204 3.1.		NR <u>·</u>	NR <u>1203720/51/0</u>		
CLIENTE Customer	DESMET BAL	LESTRA SPA		VS. ORDINE	121261 Com.2F11A/031	DATA	29/05/12		
DESCRIZIONE Description	VALVOLA A S	SFERA		_MATERIALE	CFBM	Date QUANTITA'	1		
TIPO	ALFA 10NF	DN 80 UNC	ANSI 150	MaterialMATRICOLE	1209584	Total Q.ty' DISEGNO			
Type AZIONAMENTO Operator SIGLE	PNEUAMTIC BOX	ACTAUTOR TYPE G	SAT150 SE +	Identification Nr.  SPECIFICA DI COLLA  Test Specification	UDO	Drawing API 6D/ISO14313 Procedure IOC 001 Rev.6			
tem tem	KV62.8								
		- 111111		ICO CERTIFICATI MA Material Certificate List					
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q.ty Nr.	LOTTO MA Raw Material Io	ATERIA PRIMA	CERTIFICATO NR. Certificate nr.				
CORPO Body	CF8M	1	M0194	·	20100129208		HE TO A STATE OF THE STATE OF T		
CHIUSURA End	CF8M	1	M0194		20100129208				
SFERA Ball	CF8M	1	M0581		10040801				
Alfa Val Alfa vaivole	vole S.r.l. dichiara S.r.l. declares tha	che i prodotti e i mat t the products and the	teriali dei comp	onenti utilizzati sono co	onformi ai requisiti del vostro ordine re in conformity to order requireme	e,e ai disegni applicab	ili		
		process and the		To the Components a	re in combinity to order requireme	inis and Drawing appl	caple		
PROVE IN PRESSIONE Pressure Test	L L	IDRAULICA CORPO		OVA IDRAULICA SEDI	PROVA PNEUMATICA SEDI	PROVA PNEUMATI			
PRESSIONE	800	y Hydraulic Test 30 bar	5	eats Hydraulic Test 22 har	Seats Preunatic Test	Body Pneunati	c Test		

**ESITO PROVE** Result FORNITORE Supplier

Valve Pressure

STRUMENTAZIONE

PRESSIONE VALVOLA

Testing apparatus

Pressure

FLUIDO

Fluid



Minimum Time 120s

Actuator Supply

PRESSIONE ATTUATORE

In accordo alla norma di riferimento

According to spec, reference

TIPO

PROVE FUNZIONALI (A RICHIESTA)

Functional Test (upon request)

ISPETTORE CLIENTE Customer Inspector

MANOMETRO

Acqua con inibitore di ruggine al 3%,esente da Cloro,Fosforo

Water with 3% of rust inhibitor, free of Clorine, Fosfate

Positive Results ENTE DI COLLAUDO inspection Agency

227-97

0+10 bar

COPPIA MISURATA

Torque measurement

Esito Favorevole

ARIA

Air

0+40 bar

67944 23-2010

6 bar

Minimum Time 120s

ARIA

Air

MISURAZIONE COPPIA DI MANOVRA (A RICHIESTA)

Torque measurement (upon request

MATRICOLE

Identification N

ESAME VISIVO E DIMENSIONALE

Visual and Dimensional Test

I certificati di origine dei materiali sono disponibili presso Alfa Valvole Srl per la durata di 10 anni, secondo la Direttiva 97/23/CE "PED"
The certificates of origin for the material are available from AlfaValvole srl for a period of 10 years, according to the "PED" Directive 97/23/EC
Les certificats des matèriaux sont disponibles dans Alfa Valvole Srl pour 10 ans, selon la Directive 97/23/CE "PED"
Сертификаты происхождения материалов имеются в наличии и будут находится у компании Alfa Valvole srl в течении 10 лет, согласно директиве 97/23/CE "PED".
Los certificados de origen de materiales están disponibles en la firma Alfa Valvole Srl por un período de 10 años, según lo estipulado por la Directiva 97/23/CE "PED".

22 bar

Minimum Time 120s

PRESSIONE

Pressure

### ZHEJIANG SHIDAI CASTING CO.,LTD

### INSPECTION CERTIFICATE ACCORDING TO

EN 10204 3.1

CUSTOMER: ALFA VALVOLE SRL ORDER N.:

901833

REPORT Nº: 20100129208 DATE 2010-1-29

HEAT NR.	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
6575	2	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	
2190	4	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	_
6585	11	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	GENOVA, ITALY
2388	28	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	MADE IN CHINA
6592	16	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	C/NO. 15
6587	14	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	LOT
6597	16	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	NUMBERS:2010
2191	3	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	131
2378	6	A10N-DN80 Undrilled	3493 Rev.4 3491 Rev.3	<b>***</b>
		abidente termina		_

CHEMICAL ANALYSIS

OTTENIOAL /	TITALIOIO				j	47 k								
ALLOY			С	Si	Mn	-P-		· C	Ni	Mo				
A351 CF8M	REQUIRED	MIN	ĺ					18:00	9.00	2.00				
		MAX	0.080	1.50	1.50	0.040	0.040	21,00	12.00	3.00		<b>!</b>		<u> </u>
HEAT NR.				····	<b></b>	· · · · · · · · · · · · · · · · · · ·			1		·		·	<u></u>
6575			0.054	0.59	1.15	0.031	0.006	18.10	9.26	2.10		<u> </u>		
2190			0.064	0.70	1.24	0.032	0.008	18.07	9.10	2.14				<u> </u>
6585			0.053	0.59	1.07	0.030	0.007	18.24	9.20	2.06		1		
2388			0.057	0.66	1.24	0.030	0.007	18.50	9.25	2.15				
6592			0.053	0.51	1.00	0.033	0.007	18.27	9.23	2.10				
6587			0.054	0,54	0.94	0.032	0.005	18.20	9.20	2.05		·	-	
6597			0.055	0.60	1.09	0.031	0.006	18.30	9.20	2.12				
2191			0.061	0.53	1.26	0.031	0.010	18.12	9.11	2.07		-		
2378			0.055	0.61	1.15	0.030		l————	9.20	2.15		·	l	
						1	7					<u> </u>		<b></b>

### **MECHANICAL PROPERTIES**

YELD POINT	TENSILE STRENGTH	ELONGATION	REDUCTION	HARDNESS	IMPACT TEST			
Rp 0.2% (Mpa)	Rmn(Mpa)	A %	Z %	HB	KV JO			
min 205	> 485	min 30	min	>135 < 187	1	2	3	
222	517	43		150				
225	527	40		156				
229	528	38		157				
224	528	42						
225	527	43					<u> </u>	
226	524	40	"					
227	531	40						
221	524	42						
237	529	36						
	Rp 0.2% (Mpa) min 205 222 225 229 224 225 226 227 221	Rp 0.2% (Mpa)         Rmn(Mpa)           min         205         > 485           222         517           225         527           229         528           224         528           225         527           226         524           227         531           221         524	Rp 0.2% (Mpa)         Rmn(Mpa)         A %           min         205         > 485         min         30           222         517         43           225         527         40           229         528         38           224         528         42           225         527         43           226         524         40           227         531         40           221         524         42	Rp 0.2% (Mpa)     Rmn(Mpa)     A %     Z %       min     205     > 485     min     30     min       222     517     43     40       225     527     40     40       229     528     38     42       224     528     42     42       225     527     43     40       226     524     40     40       227     531     40     42       221     524     42	Rp 0.2% (Mpa)         Rmn(Mpa)         A %         Z %         HB           min         205         > 485         min         30         min         >135         < 187	Rp 0.2% (Mpa)         Rmn(Mpa)         A %         Z %         HB         KV JO           min         205         > 485         min         30         min         >135         < 187	Rp 0.2% (Mpa)         Rmn(Mpa)         A %         Z %         HB         KV JOULE           min         205         > 485         min         30         min         >135         < 187	

以人生的

HEAT TREATEMENT VISUAL EXAMINATION **TECHNICAL REQUIREMENT**  SOLUTION TREATEMENT 1080 C WATER

ACCORDING MSS SP-55

EUROPEAN DIRECTIVE 97/23/EC PED

NACE MR01-75 / ISO 15156

A' RMSIGNATURE

E and M0194

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### MAX PRECISE INDUSTRIAL CO. LTD.

16-1, LANE 314, CHANG-LU ROAD, SEC. 6 FU-SHIN HSIANG 506, CHANGHUA, TAIWAN Tel: 886-4-778-4546 / Fax: 886-777-9273

### INSPECTION CERTIFICATE ACCORDING TO S/DIN 50049 /EN 10204 3.1.B

<b>ASTM</b>			<b></b>	****	DATE: APR 08, 2010			
Customer: ALFA	VALVOLE S.I	R.L			Test No.: 10040801			
Order No.: 162/2	2010, 159/2 <mark>010</mark> F	REV.1	Materia	al: CF8M				
Other specificati	ons:							
Tensile test: AST	'M-A370							
Heat Treatment	-Solution Tr	eatmen	t 1080℃	Water				
Heat No.	Quantity			Ite	em			
9902125	450	DN150	BALL DE	AWING NO.	.030 POS.12 REV.5			
A100311-22	103	DN100	DN100 BALL DRAWING NO.180 POS.9 REV.0					
1004016	1392	DN80 I	BALL DRA	AWING NO.0	30 POS.9			
9902138	508	DN100	N BALL I	RAWING NO	O.030 POS.14			

### Mechanical properties

Heat No.	Yield point N/mm2	Tensile Strength N/ mm2	Elongation %	Brinell Hardness (HB)	
9902125	323	531	46	152	
A100311-22	273	524	46	159	
1004016	220	542	40	162	
9902138	315	528	46	150	

### Chemical analysis%

Heat No	C	Si	Mn	P	S	Cr	Ni	Mo	
9902125	0.07	0.58	0.8	0.033	0.021	18.13	9.21	2.16	
A100311-22	0.06	1.04	0.97	0.025	0.005	18.73	9.41	2.08	
1004016	0.04	0.47	0.83	0.024	0.007	18.34	9.36	2.14	
9902138	0.06	0.66	0.78	0.034	0.018	18.33	9.16	2.11	

QUALITY CONTROL

Signature:	Zora
~~~ <del>~</del>	

ASSICURAZIONE QUALITA' RML Nr.

\_\_ M058<sup>-</sup>

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NR 1203720/61/0

VALVOLE A SFERA - BALL VALVES ROBINETS À BOULE - KUGELHÄHNE UNI EN 180 94011:2000 Nr. 50 100 6417 Rev.01

UNLEN ISO 9001:2008

**CERTIFICATO DI COLLAUDO** 

CE 0948-Modulo H

CEC-06 / 2037-ADF178 Certificato nr. PED-0948-QSH-321-10 Directive 94/9/EC - Article 8 (1) b) ii)

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 l.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-mail: alfavalvole@alfavalvole.lt - www.alfavalvole.it

26/09/2012

DATA

Date INSPECTION CERTIFICATE UNI EN 10204 3.1. CLIENTE **DESMET BALLESTRA SPA** VS. ORDINE 121261 Com.2F11A/031 DATA 29/05/12 DESCRIZIONE MATERIALE QUANTITA' VALVOLA A SFERA **CFBM** 3 Description Total Q.ty TIPO ALFA 10NF DN 50 UNC **ANSI 150** MATRICOLE 1209585 DISEGNO AZIONAMENTO PNEUAMTIC ACTAUTOR TYPE GAT115 SE + API 6D/ISO14313 SPECIFICA DI COLLAUDO Procedure IOC 001 Rev.6 Operato BOX Test Specification SIGLE KV62.9, KV62.11, KV62.12 **ELENCO CERTIFICATI MATERIALI** Material Certificate List **PARTICOLARE** MATERIALE QUANTITA NR. LOTTO MATERIA PRIMA CERTIFICATO NR. Total Q.ty Nr. Raw Material Jot.Nr (RML Nr) Valve Part Material Certificate nr. CORPO CF8M M1573 20110426056 Body CHIUSURA M1573 CF8M 20110426056 SFERA CF8M M1993 BT-001101-2ND Ball Alfa Valvole S.r.I. dichiara che i prodotti e i materiali dei componenti utilizzati sono conformi ai requisiti del vostro ordine,e ai disegni applicabili Alfa valvole S.r.l. declares that the products and the material used for the Components are in conformity to order requirements and Drawing applicable

PROVE IN PRESSIONE	PROVA IDRAULICA CORPO	PRO	IVA IDRAULICA SEDI	PROVA PNEUMATICA SEDI	PROVA PNEUMA	TICA CORPO	
Pressure Test	Body Hydraulic Test	Sı	eats Hydraulic Test	Seats Pneunatic Test	Body Prieur	atic Test	
PRESSIONE	30 bar		22 bar	6 bar			
Pressure	Minimum Time 120s	Min	imum Time 120s	Minimum Time 120s			
FLUIDO	Acqua con inibitore di ruggine a	l 3%,esente da	a Cloro,Fosforo	ARIA	ARIA		
Fluid	Water with 3% of rust inhibite	or, free of Clorin	ne, Fosfate	Air	Аiг		
STRUMENTAZIONE	ПРО	MANOMETRO	)	MATRICOLE	227-97	0+40 bar	
Testing apparatus	Туре	Pressure Gauge	!	Identification Nr.	0+10 bar	67944 23-2010	
PF	ROVE FUNZIONALI (A RICHIESTA)			MISURAZIONE COPPIA DI MANOVRA (A RICHIESTA)			
	Functional Test (upon request)			Torque measurement (upon re	equest)		
PRESSIONE VALVOLA	PRESSIONE ATTUATORE		PRESSIONE		COPPIA MISURATA		
Vaive Pressure	Actuator Supply		Pressure		Torque measurement		
ESITO PROVE	In accordo alla norma di riferime:	nto	ESAME V	ISIVO E DIMENSIONALE	Esito Favorevole		
Result	According to spec. reference		Visua	ni and Dimensional Test	Positive Results		

FORNITORE Supplier



ISPETTORE CLIENTE Customer inspector

ENTE DI COLLAUDO inspection Agency

### ZHEJIANG SHIDAI CASTING CO.,LTD

### INSPECTION CERTIFICATE ACCORDING TO

EN 10204 3.1

CUSTOMER: ALFA VALVOLE SRL ORDER N.: 000284

REPORT N°: 20110426056 DATE 2011-4-26

HEAT NR.	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
2494	113	Alfa10N DN50 UNDRILLED	3425 Rev.3 3426 Rev.3	_
2495	128	Alfa10N DN50 UNDRILLED	3425 Rev.3 3426 Rev.3	
2496	125	Alfa10N DN50 UNDRILLED	3425 Rev.3 3426 Rev.3	] GENOVA, ITALY
2497	125	Alfa10N DN50 UNDRILLED	3425 Rev.3 3426 Rev.3	MADE IN CHINA
2507	9	Alfa10N DN50 UNDRILLED	3425 Rev.3 3426 Rev.3	C/NO. 6-8
		121		LOT NUMBERS:2011
· · · · ·		- WA		425

### CHEMICAL ANALYSIS

		C	Si	Mn	P	S	Cr	Ni	Мо			
REQUIRED	MIN						18.00	9.00	2.00			
1	MAX	0.080	1.50	1.50	0.040	0.040	21.00	12.00	3.00			
		0.052	0.62	1.04	0.031	0.005	18.40	9.24				
		0.054	0.62	1.13	0.030	0.006	18.43	9.32	2.16			
		0.054	0.62	1.06	0.032	0.006	18.40	9.30	2.14			
		0.056	0.57	1.05	0.031	0.006	18.46	9.31	2.20			
		0.050	0.74	1.00	0.034		18.40	9.24	2.14			
						3	T/C	g #				-
					· ť.							<u> </u>
	REQUIRED	MAX	REQUIRED MIN 0.080  0.052 0.054 0.056 0.056 0.050	REQUIRED MIN 0.080 1.50    0.052 0.62   0.054 0.62   0.054 0.62   0.056 0.57   0.050 0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.74   0.050   0.050   0.74   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050   0.050	REQUIRED MIN 0.080 1.50 1.50  0.052 0.62 1.04 0.054 0.62 1.13 0.054 0.62 1.06 0.056 0.57 1.05 0.050 0.74 1.00	REQUIRED MIN 0.080 1.50 1.50 0.040    0.052 0.62 1.04 0.031     0.054 0.62 1.13 0.030     0.054 0.62 1.06 0.032     0.056 0.57 1.05 0.031     0.050 0.74 1.00 0.034	REQUIRED MIN 0.080 1.50 1.50 0.040 0.040  0.052 0.62 1.04 0.031 0.005 0.054 0.62 1.13 0.030 0.006 0.054 0.62 1.06 0.032 0.006 0.056 0.57 1.05 0.031 0.006 0.050 0.74 1.00 0.034 0.007	REQUIRED MIN				

### MECHANICAL PROPERTIES

	YELD POINT	7	TENSIL	E STRENGTH	ELON	GATION	REDUCTION	HARDN	ESS	IMPACT	TEST		
REQUIRED	Rp 0.2% (	Mpa)	Rmn(	VIpa)	A %		Z %	HB		KV JC	ULE		
	min	205		485	min	30	min	>135	< 187	1	2	3	
HEAT NR.													
2494	238			533		37			159				<u> </u>
2495	231			529		42		•	55				<u> </u>
2496	229			524		42		•	151				<u> </u>
2497	237		-	531		38			157			l. <b></b>	
2507	238			532		37			159				
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HEAT TREATEMENT VISUAL EXAMINATION TECHNICAL REQUIREMENT SOLUTION TREATEMENT 1080 °C

ACCORDING MSS SP-55

EUROPEAN DIRECTIVE 97/23/

NACE MR01-75 / ISO-151,56

ALFA VALVOLE STAC 15 Rev. 2

SIGNATURÉ

ASSICURAZIONE QUALITA' RML Nr.



M1573

COPIA CONFORME APPOBIGINALE COPY COMPLYING WITH THE ORIGINAL

COPIA CONFORME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL

### BOLA-TEK MFG. CO., LTD.

P.O. BOX:35-78 TAICHUNG TAIWAN R.O.C.

Certificate EN 10204 - 3.1		7.55-76 IA						1_31			
ALFA VALVOLE SRL	Kiant/custom	ier:		<u> </u>	CHARC	CREC B	1	***	-2ND		
Tem	ALFA VALV	OLE SRL						, o	2110		
Term						INVOIC	E NO:BT-0831/2	1011	DATE: AL	IG 31 201	1
1	[tem	Q'ty	I	Descripti	on		·	· · · · · · · · · · · · · · · · · · ·	<u> </u>		
2 4176 BALL(28,5X14) 15 ASTM-A351-CF8M 3 2972 BALL(62,33719) 20 ASTM-A351-CF8M 4 2587 BALL(62,3371) 40 ASTM-A351-CF8M 5 2091 BALL(78,348) 50 ASTM-A351-CF8M 6 2100 BALL(1187,35) 80 ASTM-A351-CF8M 7 54 BALL(148,394) 100 ASTM-A351-CF8M ASTM-A351-CF8M 7 54 BALL(148,394) 100 ASTM-A351-CF8M ASTM-ASTM-ASTM ASTM-ASTM-ASTM ASTM	1		B	ALL(19)	(10)	10					
3   2972   BALL(62X37)   40   -	2	4176			<del>-</del>				1		
4 2587 BALL(FX348) 50 ASTM-A351-CFBM 5 2091 BALL(1187X5) 80 ASTM-A351-CFBM 6 2100 BALL(1187X5) 80 ASTM-A351-CFBM 7 54 BALL(148X94) 100 ASTM-A351-CFBM ASTM-ASTM-ASTM-ASTM-ASTM-ASTM-ASTM-ASTM-	3	2972	1	-	-	ŀ		_			
Section   Sect	4	2587		•	-						
Charge Nr.   Cha	5	2091	l	-	-		_		1		
Part	6	2100	ł .	•	-	1			i		
Nethanishe eigneschappen/mechanical properties   Tensile strength (Mpn)   Yieldpoint (Mpn)   Elongation (Mpn)   Part   Charge Nr.   Q'ty   Hydrostatic test   Tensile strength (Mpn)   Yieldpoint (Mpn)   Elongation (Mpn)   Part   Par	7	54	ВА	LL(148)	X94)	1		_	- 1		
Hem											
Hem								Mechanishe	rignenschanner	a/mechanical	nronerties
BALL(19X10)   GG30   4225     569.00   304.00   45.00	ltem	Part		Char	ge Nr.	Q'ty	Hydrostatic test			· · · · · · · · · · · · · · · · · · ·	
Selection   Sele							_	1 -		•	
BALL(19X10)								RM	Rpi	0.2	A
2 BALL(28.5X14) 6G31 4176 - 541.00 349.00 45.00 3 BALL(35X19) 6G32 2972 - 514.00 211.00 42.00 4 BALL(62X37) 6G35 2587 - 517.00 213.00 44.00 5 BALL(78X48) 6G36 2091 - 543.00 221.00 39.00 6 BALL(1187X5) 6G37 2100 - 545.00 223.00 39.00 7 BALL(148X94) 6G38 54 - 502.50 216.50 38.50  CHEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mn % P % S % Cr % Mn % Ni % <-0.08 <-1.50 <-1.50 <-0.04 <-0.04 18.0-21.0 2.0-3.0 9.0-12.0  6G30 0.0600 0.6320 0.9340 0.0310 0.0100 18.7600 2.1300 9.1500 6G31 0.0685 0.6385 0.9059 0.0289 0.0055 18.0724 2.1126 9.0414 6G32 0.0620 0.5300 0.9850 0.0330 0.0070 18.5030 2.1850 9.1270 6G35 0.0364 0.6086 0.9679 0.0318 0.0054 18.3620 2.2251 9.1743 6G36 0.0492 0.5148 0.6702 0.0335 0.0081 18.5750 2.1540 9.3921 6G37 0.0507 0.4768 0.6342 0.0346 0.0081 18.6450 2.2113 9.1294 6G38 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500  We hereby certify that material described above has been succesfully tested and complies with the terms of the order.								>=485	>=2	205	>=30
3 BALL(35X19) 6G32 2972 − 514.00 211.00 42.00 4 BALL(62X37) 6G35 2587 − 517.00 213.00 44.00 5 BALL(78X48) 6G36 2091 − 543.00 221.00 39.00 6 BALL(1187X5) 6G37 2100 − 545.00 223.00 39.00 7 BALL(148X94) 6G38 54 − 502.50 216.50 38.50  CHEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mπ % P % S % Cr % Mα % Ni % < -0.08 <-1.50 <-1.50 <-0.04 <-0.04 18.0-21.0 2.0-3.0 9.0-12.0 6G30 0.0600 0.6320 0.9340 0.0310 0.0100 18.7600 2.1300 9.1500 6G31 0.0685 0.6385 0.9059 0.0289 0.0055 18.0724 2.1126 9.0414 6G32 0.0620 0.5300 0.9850 0.0330 0.0070 18.5030 2.1850 9.1270 6G35 0.0364 0.6086 0.9679 0.0318 0.0054 18.3620 2.2251 9.1743 6G36 0.0492 0.5148 0.6702 0.0335 0.0081 18.5750 2.1540 9.3921 6G37 0.0507 0.4768 0.6342 0.0336 0.0081 18.6450 2.2113 9.1294 6G38 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500 4.0638 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500 4.0638 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500 4.0638 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500 4.0638 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500 4.0638 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500 4.0638 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500	=	1	•	l					304	.00	45.00
4 BALL(62X37) 6G35 2587 - 517.00 213.00 44.00 5 BALL(78X48) 6G36 2091 - 543.00 221.00 39.00 6 BALL(1187X5) 6G37 2100 - 545.00 223.00 39.00 7 BALL(148X94) 6G38 54 - 502.50 216.50 38.50  CHEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mn % P % S % Cr % Mo % Ni % < 0.08 <=1.50 <=1.50 <=0.04 <=0.04 18.0-21.0 2.0-3.0 9.0-12.0 6G31 0.0660 0.6320 0.9340 0.0310 0.0100 18.7600 2.1300 9.1500 6G31 0.0685 0.6385 0.9059 0.0289 0.0055 18.0724 2.1126 9.0414 6G32 0.0620 0.5300 0.9850 0.0330 0.0070 18.5030 2.1850 9.1270 6G35 0.0364 0.6086 0.9679 0.0318 0.0054 18.3620 2.2251 9.1743 6G36 0.0492 0.5148 0.6702 0.0335 0.0081 18.6702 2.2251 9.1743 6G36 0.0492 0.5148 0.6702 0.0335 0.0081 18.5750 2.1540 9.3921 6G37 0.0507 0.4768 0.6342 0.0346 0.0081 18.6750 2.11540 9.3921 6G38 0.0507 0.4768 0.6342 0.0346 0.0081 18.2100 2.1000 9.1500 € C € C € C € C € C € C € C € C € C €		_	•				<del></del>				
5 BALL(78X48) 6G36 2091 - 543.00 221.00 39.00 6 BALL(1187X5) 6G37 2100 - 545.00 223.00 39.00 7 BALL(148X94) 6G38 54 - 502.50 216.50 38.50  CHEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mn % P % S % Cr % Mo % Ni % < 0.08 <-1.50 <-1.50 <-0.04 <-0.04 18.0-21.0 2.0-3.0 9.0-12.0  6G30 0.0600 0.6320 0.9340 0.0310 0.0100 18.7600 2.1300 9.1500 6G31 0.0685 0.6385 0.9059 0.0289 0.0055 18.0724 2.1126 9.0414 6G32 0.0620 0.5300 0.9850 0.0330 0.0070 18.5030 2.1850 9.1270 6G35 0.0364 0.6086 0.9679 0.0318 0.0054 18.3620 2.2251 9.1743 6G36 0.0492 0.5148 0.6702 0.0335 0.0081 18.5750 2.1540 9.3921 6G37 0.0507 0.4768 0.6342 0.0346 0.0081 18.6450 2.2113 9.1294 6G38 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500  We hereby certify that material described above has been successfully tested and complies with the terms of the order.  OULUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.		1	-	1		ł	_				
6 BALL(1187X5) 6G37 2100 - 545.00 223.00 39.00 7 BALL(148X94) 6G38 54 - 502.50 216.50 38.50  CHEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mn % P % S % Cr % Mo % Ni % < 0.08 <-1.50 <-1.50 <-0.04 <-0.04 18.0-21.0 2.0-3.0 9.0-12.0 6G30 0.0600 0.6320 0.9340 0.0310 0.0100 18.7600 2.1300 9.1500 6G31 0.0685 0.6385 0.9059 0.0289 0.0055 18.0724 2.1126 9.0414 6G32 0.0620 0.5300 0.9850 0.0330 0.0070 18.5030 2.1850 9.1270 6G35 0.0364 0.6086 0.9679 0.0318 0.0054 18.3620 2.2251 9.1743 6G36 0.0492 0.5148 0.6702 0.0335 0.0081 18.5750 2.1540 9.3921 6G37 0.0507 0.4768 0.6342 0.0346 0.0081 18.6450 2.2113 9.1294 6G38 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500  We hereby certify that material described above has been successfully tested and complies with the terms of the order.  OULUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.											
THEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mn % P % S % Cr % Mo % Ni % <a href="#"><a href<="" td=""><td></td><td>'</td><td>-</td><td>1</td><td></td><td></td><td>_</td><td></td><td></td><td></td><td>1</td></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a>		'	-	1			_				1
CHEMISCHE ZUSAMMENSTELLUNG/CHEMICAL COMPOSITION  Charge Nr. C % Si % Mn % P % S % Cr % Mo % Ni %	_		-								
Charge Nr. C % Si % Mn % P % S % Cr % Mo % Ni % 		· ·				<b>J</b> .		502.50	210	0	36.30
<=0.08         <=1.50         <=0.04         <=0.04         18.0-21.0         2.0-3.0         9.0-12.0           6G30         0.0600         0.6320         0.9340         0.0310         0.0100         18.7600         2.1300         9.1500           6G31         0.0685         0.6385         0.9059         0.0289         0.0055         18.0724         2.1126         9.0414           6G32         0.0620         0.5300         0.9850         0.0330         0.0070         18.5030         2.1850         9.1270           6G35         0.0364         0.6086         0.9679         0.0318         0.0054         18.3620         2.2251         9.1743           6G36         0.0492         0.5148         0.6702         0.0335         0.0081         18.5750         2.1540         9.3921           6G37         0.0507         0.4768         0.6342         0.0346         0.0081         18.6450         2.2113         9.1294           6G38         0.0620         0.9100         0.8700         0.0310         0.0110         18.2100         2.1000         9.1500    We hereby certify that material described above has been succesfully tested  and complies with the terms of the order.			СНЕМІ	SCHE Z	USAMM	ENSTEL	LUNG/CHEMIC	AL COMPOS	ITION	<u></u>	77,000
6G30	Charge Nr.	С%	Si	%	Mı	1 %	P%	S %	Cr%	Mo %	Ni %
6G31		<=0.08	<=1	.50	<=	1.50	<=0.04	<=0.04	18.0-21.0	2.0-3.0	9.0-12.0
6G32							0.0310	0.0100	18.7600	2.1300	9.1500
6G35										2.1126	9.0414
6G36		i			!						1
6G37 0.0507 0.4768 0.6342 0.0346 0.0081 18.6450 2.2113 9.1294 6G38 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500  We hereby certify that material described above has been successfully tested and complies with the terms of the order.  SOLUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.							·				
6G38 0.0620 0.9100 0.8700 0.0310 0.0110 18.2100 2.1000 9.1500  We hereby certify that material described above has been successfully tested and complies with the terms of the order.  SOLUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.											
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We hereby certify that material described above has been successfully tested and complies with the terms of the order.  SOLUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.	8600	0.0020	0.91	.00	. U.S.	700	0.0310	0.0110		C	9.1500
and complies with the terms of the order.  SOLUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.	13/- 11	atra et						1	LI COMPANY	\ \	<u> </u>
SOLUTION ANNEALED QUENCHED 1080°C HEATING AND WATER COOL 1.5 HOURS.					ove has b	een succe	esfully tested	BO	TEENE	學灯	Ŋ.
	=				HEATING	ለዜጦ መለተ	ב מושב ל ב מי מיים ל	,	1000		<i>!</i>
FORM NO.: 4-07-014			CHCHEL	7 1000 C	DEATING	MATE WATE	IN LOUL 1.5 HOURS	).	A G	3	



VALVOLE A SFERA - BALL VALVES VALVOLE A SFERA - BALL VALVES
ROBINETS À BOULE - KUGELHÄHNE
Nr. 50 100 6417 Rev.01





**CERTIFICATO DI COLLAUDO** 







NR 1203720/71/0

CE 0948-Modulo H Certificato nr. PED-0948-QSH-321-10 Directive 94/9/EC - Article 8 (1) b) ii)

CEC-06 / 2037-ADF178

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 l.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-mail: alfavalvole@alfavalvole.it - vvvw.alfavalvole.it

26/09/2012

DATA

Date			IN	SPECTION CERTIFICAT	ΓE		
				UNI EN 10204 3.1.			
CLIENTE	DESMET BAL	LESTRA SPA		vs. ordine	121261 Com.2F11A/031	DATA	29/05/12
Customer DESCRIZIONE	VALVOLA A S	SFERA		Your order nr. MATERIALE	CF8M	Date QUANTITA'	1
Description TIPO	Ball Valves ALFA 10NF	DN 100 UNC	ANSI 150	Material MATRICOLE	1209586	Total Q.ty' DISEGNO	
Type AZIONAMENTO Operator		ACTAUTOR TYPE GAT	T150 SE +	Identification Nr.  SPECIFICA DI COLLAUD  Test Specification	00	Drawing API 6D/ISO14313 Procedure IQC 001 Rev.6	
SIGLE Item	KV62.10			•			
			EI EN	CO CERTIFICATI MATE	DIALT		
			ELEN	Material Certificate List	INALI		
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q.ty Nr.	LOTTO MA	ATERIA PRIMA	CERTIFICATO NR. Certificate nr.		
Valve Part	Material	Total d.ty (vi.					
CORPO Body	CF8M	1	M0280		20100312118		
CHIUSURA End	CF8M	1	H7F74		200710M		
SFERA Ball	CF8M	1	M0A54	ponenti utilizzati sono cor	1080-10 nformi ai requisiti del vostro ordina	e,e ai disegni applica	bili
Alfa valvole	S.r.l. declares th	at the products and the	material use	d for the Components are	in conformity to order requireme	ents and Drawing app	licable
PROVE IN PRESSIONE Pressure Test		A IDRAULICA CORPO		OVA IDRAULICA SEDI Seats Hydraulic Test	PROVA PNEUMATICA SEDI Seats Pneunatic Test	PROVA PNEUMA Body Pneum	
PRESSIONE		30 bar		22 bar	6 bar		

ESITO PROVE FORNITORE Supplier

Valve Pressure

Result

Pressure

FLUIDO

STRUMENTAZIONE

PRESSIONE VALVOLA

Testing apparatus

Fluid



Minimum Time 120s

TIPO

PRESSIONE ATTUATORE

In accordo alla norma di riferimento

Actuator Supply

PROVE FUNZIONALI (A RICHIESTA)

Functional Test (upon request)

ISPETTORE CLIENTE Customer Inspector

MANOMETRO

Pressure Gaug

Acqua con inibitore di ruggine al 3%,esente da Cloro,Fosforo

Water with 3% of rust inhibitor, free of Clorine, Fosfate

Esito Favorevole ENTE DI COLLAUDO Inspection Agency

Positive Results

227-97

0+10 bar

COPPIA MISURATA

Torque measurement

ARIA

0+40 bar

67944 23-2010

Minimum Time 120s

ARIA Αir

MISURAZIONE COPPIA DI MANOVRA (A RICHIESTA)

Torque measurement (upon request

MATRICOLE

Identification No

ESAME VISIVO E DIMENSIONALE

Visual and Dimensional Test

Minimum Time 120s

PRESSIONE

### ZHEJIANG SHIDAI CASTING CO.,LTD

### INSPECTION CERTIFICATE ACCORDING TO EN 10204 3.1

CUSTOMER: ALFA VALVOLE SRL ORDER N.:

901833

REPORT N°: 20100312118 DATE 2010-3-12

HEAT NR. 2397	Q'TY 23	DESCRIPTION- SIZE A12N-DN100 Undrilled	DRAWING NR. 5230 Rev.2 4046 Rev.3	MARKING
2396	20	A12N-DN100 Undrilled	5230 Rev.2 4046 Rev.3	-
2395	24	A12N-DN100 Undrilled	5230 Rev.2 4046 Rev.3	GENOVA, ITALY
2394	24 9	A12N-DN100 Undrilled	5230 Rev.2 4046 Rev.3	MADE IN CHINA
2398	9	A12N-DN100 Undrilled	5230 Rev.2 4046 Rev.3	C/NO, 19 LOT
				NUMBERS:20100 311
				-

### CHEMICAL ANALYSIS

		No	Ni	Cr	S	Р	Mn	Si	С			ALLOY
		2.00	9.00	18.00						MIN	REQUIRED	A351 CF8M
		3.00	12.00	21.00	0.040	0.040	1.50	1.50	0.080	MAX-		The separate property and
	 				· · · · · · · · · · · · · · · · · · ·							HEAT NR.
		2.17	9.30	18.40	0.005	0.029	1.23	0.68	0.058			2397
		2.15	9.22	18.50	0.005	0.029	1.21	0.67	0.053			2396
		2.10	9.25	18.35	0.005	0.027	1.25	0.69	0.048			2395
	 	2.12	9.17	18.37	0.005	0.031	1.21	0.63	0.056			2394
		2.10	9.31	18.40	0.005	0.029	1.25	0.67	0.056			2398
				-								
			3 - 51	8. 3-	]						<u> </u>	•
			· F3	17.20	70 J.							
	 		- i i	4 0 1								
-	 			*9			***************************************					

### **MECHANICAL PROPERTIES**

	YELD POINT	•	TENSILE	E STRENGTH	ELON	GATION	REDUCT	ION	HARDN	IESS	IMPACT	TEST		
REQUIRED	Rp 0.2% (f	VIpa)	Rmn(N	(Ipa)	A %	. :	Z %		НВ		KV JO	ULE		
	min	205	>	485	min	30	min		>135	< 187	1	2	3	
HEAT NR.								*****						
2397	228	······································		525		40				152				
2396	235			529		37		*	1	155				
2395	225			516		43			<b></b>	145		· <del></del>		
2394	232			526		39	-			152				_
2398	221			523		45				149		***************************************		
							4 7			······································				Г
							14	1 1 2	Hatta is			**		$I^-$
						Ţ	1 1 1	¥ - H	1 1					
							-		H					
							1							

HEAT TREATEMENT VISUAL EXAMINATION TECHNICAL REQUIREMENT SOLUTION TREATEMENT 1080 °C WATER

ACCORDING MSS SP-55

EUROPEAN DIRECTIVE 97/23/EC PED

NACE MR01-75 / ISO 15156

ITA' RML NIGNATURE

M0280

COPIA CONFORME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL

OLE STAC 15 Rev. 2



### Zhejiang Shidai Casting Co.,Ltd

### INSPECTION CERTIFICATE ACCORDING TO EN 10204 3.1

CUSTOMER: ALFA VALVOLE ORDER N.: 700003 add order REPORT N°: 200710M DATE 20071010

INVOICE: FT07A113C011

HEAT NR.	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
0088	2	ALFA 10 DN100 UNDRILLED .	5230+4046	, .
0089	5	ALFA 10 DN100 UNDRILLED	5230+4046 \	
0108	45	ALFA 10 DN100 UNDRILLED	5230+4046	
0109	47	ALFA 10 DN100 UNDRILLED	5230+4046	
0110	47	ALFA 10 DN100 UNDRILLED	5230+4046	
0111	54	ALFA 10 DN100 UNDRILLED	5230+4046	
**	200			,
-			•	

### **CHEMICAL ANALYSIS**

ALLOY.		; Ŧ,	Ĉ	Si	Mri	P	S	<b>Gr</b> 76	Ni -	Mo		<u> </u>		
A351=CF8M	REQUIRE	MIN	1,76	na a na ang ang ang ang ang ang ang ang				18.000	97.000	2:000	12.4		11.1	
		XAM	0.080	1.500	1.500	0.040	0.040	21.000	12,000	3.000	` .		i i	
HEAT NR.			tresta. Ar akkin											
₹0088		1	0:056	0.610	1.140	0:027	0:006	18:100	9.050	2:070				
0089			0.060	0.520	1.120	0.029	0.007	18,100	9.120	2.100				
0108	,		0:053	0.710	1.230	0.030	0.008	1181000	19.100	2:050			11	
SM 0109		- :]	0:063	0.560	1.210	0.027.	0.006	18.120	9.060	2.100			i .	
0110			0.059	0.540	1.260	0:028	0.006	18:150	9:100	2.070				
0111			0:064	0.570	11130	0.027	0.009	ៅ8:100	9:110	2.000	<b>动</b>			
	1,5			6,114,6215 TE							1			

MECHANICAL PROPERTIES

	YELD POINT	TENSILE STRENGTH	ELONGATION	REDU	CTION	HARDN	ESS	IMPA	CT TEST		n i religio
REQUIRED			A.%	Z %		НB	- 12 E 1	KV.	JOULE		
	mln 20 <u>5</u>	> 485	min 30	min	4.	≨135.	<:187	1	2	3∴	Aver
HEAT NR.	* .					,					7177739
8800	233	515	37							i ve	mail (III)
0089	236	510	38					- 4,	,		
0108	234	513	42								1.1
0109	230	509	37								
0110	231	511	41							-	
0111	230	.507	. 38		• • • • • • • • • • • • • • • • • • • •					, ,	
										<u> </u>	

HEAT TREATEMENT

SOLUTION TREATEMEN 1080 °C WATER QUENCHED

VISUAL EXAMINATION

ACCORDING MSS SP-55

TECHNICAL REQUIREMENEUROPEAN DIRECTIVE 97/23/EC PED

ALFA VALVOLE STAC 15 Rev. 1

NACE MR01-75 / ISO 15156

**SIGNATURE** 

第25起

ASSICURAZIONE QUALITA' HEAT Nr.

COPY COMPLYING WITH THE ORIGINALE

# HAITIMA CORPORATION

Neihu Area Taipei 114 Taiwan 8F, No. 201, Tiding Blvd. Sec. 2,

Invoice No.: EX 1080/10

Contract No.: P.O. 001771 rev.1

ACC. TO EN 10204 3.1

MATERIAL TEST CERTIFICATE

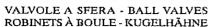
Ni   Cr   Mo   Cu   N	ΑV	Messres. ALFA VALVOLE S.R.L.	L.				- 1				DA	DATE: Dec. 27, 2010
Si   Mn   P   S   Ni   Cr   Mo   Cu   N   C   C   M   MAX   C   C   M   MAX			:		Chemical	Composition	on %				Type: AS	Type: ASTM A351-CF8M
2.0以下 1.5以下 0.04以下 0.04以下 0.04以下 0.04以下 0.04以下 0.051 0.004 9.27 18.46 2.17	ں	Si	Mn	Ъ	S	Z	Ċ	Mo	Cu	z		
MAX   MAX   MAX   9.0~12.0   18.0~21.0   2.0~3.0	以			0.04以下	0.04以下						規格	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
0.45   0.96   0.031   0.004   9.27   18.46   2.17	ΑX				MAX	9.0~12.0	18.0~21.0					
Macchanical Test (ASTM A370)	032		0.96	0.031	0.004	9.27	18.46	2.17				
Mechanical Test (ASTM A370)   Hoult Treatment:   Holding Temp												0N100
Mechanical Test (ASTM A370)												
Mechanical Test (ASTM A370)   Hour Treatment   Holding temp   Holding temp												504 pcs
Mechanical Test (ASTM A370)         Mechanical Test (ASTM A370)         Reduction of the condition o												•
Mechanical Test (ASTM A370)           DIA         TENSILE strength         veric strength         debuction         HARDNESS         Heat Treatment:           12.5mm $= 485$ $= 205$ $= 30$ -         183           12.5 $= 509$ $= 234$ 38         -         157           12.5 $= 509$ $= 157$ Holding Time           12.5 $= 157$ Holding temp         Holding temp												
DIA         TENSILE         viel. D strength         elongation         inabless         Heal Treatment:           STRENGTH         0.2% OFFSET         9%         9%         9%         MAX           12.5mm         ≥485         ≥205         ≥30         -         183           12.5mm         ≥485         ≥30         -         183           12.5mm         >609         234         38         -         157           Holding Time         Holding Time         Holding temp         Holding temp           12.5         10         10         10			Mechanica	al Test (AS	TM A370)							
Sithength   Dish offset   Of area   (HB)   Mpa   Mpa   $\frac{9}{6}$   $\frac{9}{6}$   MAX   MAX   12.5mm   $\geq 485$   $\geq 205$   $\geq 30$   - 183   Holding Temp   Holding Time   Holding timp   H	N		TENSILE	YIELD STRENGTH	1		1	Heat Treatment:				
Mpa         Mpa         %         %         MAX           12.5mm         ≥485         ≥205         ≥30         -         183           12.5         509         234         38         -         157           Holding Time         Holding Time           Treatment         holding temp         Holding temp           MAX         Holding temp         Holding temp           Solution Annealed         1080-1100 °C         1hr/in	NGT		STRENGTH	0.2% OFFSET		OF AREA	(HB)					
12.5mm         ≥485         ≥205         ≥30         -         183         -         157         Holding temp         +           12.5         509         234         38         -         157         Holding Time         +           12.5         509         234         38         -         157         Holding temp         Holding temp           12.5         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10			Мра	Мра	%	%	MAX					
12.5   509   234   38   -   157   Holding Temp   Holding Time   Holding temp	Jmn		≥485	≥205	≥30	1	183					
Holding Time  Holding temp Holding 1080-1100 °C 1hr/in	50	12.5	509	234	38	,	157			Holding Te	duix	
Holding Time  Holding temp Holding  1080-1100 °C lhr/in								\			_	WATER COOLING
holding temp Holding 1080-1100 °C 1hr/in								<u>'</u>		Holding Ti		/
holding temp Holding 1080-1100 °C 1hr/in												<b>7</b> 8
1080-1100 °C								Treatme		alding temp	Holding	Remarks
								Solution An		080-1100 °C	1hr/in	

ASSICURAZIONE QUALITA' RML Nr.

DNEORME ALL'ORIGINAL

QA MANAGER:













 VALVOLE A SFERA - BALL VALVES
 UNI EN ISO 9001:2008
 CE 0948-Modulo H
 CEC-06 / 2037-ADF178

 ROBINETS À BOULE - KUGELHÄHNE
 UNI EN ISO 9001:2008
 CE 0948-Modulo H
 CEC-06 / 2037-ADF178

 Nr. 50 100 6417 Rev.01
 Certificato nr. PED-0948-QSH-321-10
 Directive 94/9/EC - Article 8 (1) b) ii)

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 i.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-mail: alfavalvole@alfavalvole.lt - www.alfavalvole.it

DATA Date	26/09/2012			FICATO DI COL ISPECTION CERTIFICA UNI EN 10204 3.1.		NR	1203720/81/0
CLIENTE Customer DESCRIZIONE DESCRIZIONE TIPO Type AZIONAMENTO Operator SIGLE Item	VALVOLA A S Ball Valves ALFA 10NF	LLESTRA SPA SFERA DN 25 UNC ACTAUTOR TYPE G	ANSI 150 AT85 SE +	VS. ORDINE Your order nr. MATERIALE Material MATRICOLE Identification Nr. SPECIFICA DI COLLAUI Test Specification	121261 Com.2F11A/031 CF8M 1208587	DATA Date QUANTITA' Total Q.ty' DISEGNO Drawing API 6D/ISO14313 Procedure IOC 001 Rev.6	29/05/12 1
			ELEN	CO CERTIFICATI MATE	ERIALI		
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q.ty Nr.	LOTTO MA	ATERIA PRIMA	CERTIFICATO NR. Certificate nr.		
CORPO Body CHIUSURA End	CF8M CF8M	1	M1B12 M1B12		20111020218 20111020218		

FORNITORE	According to spec, reference	l	Visual and Dimensional Test	Positive Results	
ESITO PROVE Result	In accordo alla norma di riferimen	to	ESAME VISIVO E DIMENSIONALE	Esito Favorevole	
Valve Pressure	Actuator Supply	Pres	sure	Torque measurement	l
PRESSIONE VALVOLA	PRESSIONE ATTUATORE	PRES:	SIONE	COPPIA MISURATA	
	Functional Test (upon request)		Torque measuren	ent (upon request)	
F	'ROVE FUNZIONALI (A RICHIESTA)	· · · · ·	MISURAZIONE COPPIA DI MA	NOVRA (A RICHIESTA)	
Testing apparatus	Туре	Pressure Gauge	Identification Nr.	0+10 bar	67944 23-2010
STRUMENTAZIONE	TIPO	MANOMETRO	MATRICOLE	227-97	0+40 bar
Fluid	Water with 3% of rust inhibito	r, free of Clorine, Fosfate	Air	Air	
FLUIDO	Acqua con inibitore di ruggine al		ARIA	ARIA	
	Minimum Time 120s	Minimum Time 1		)s	
PRESSIONE Pressure	30 bar	22 bar	6 bar		-
Pressure Tost	Body Hydraulic Test	Seats Hydraulic Te	t Seats Pneunatic Test	Body Pneun	
PROVE IN PRESSIONE	PROVA IDRAULICA CORPO	PROVA IDRAULICA S	EDI PROVA PNEUMATICA SE	DI PROVA PNEUMA	TICA CORPO

Alfa Valvole S.r.l. dichiara che i prodotti e i materiali dei componenti utilizzati sono conformi ai requisiti del vostro ordine,e ai disegni applicabili Alfa valvole S.r.l. declares that the products and the material used for the Components are in conformity to order requirements and Drawing applicable

Supplier



ISPETTORE CLIENTE Customer Inspector

ENTE DI COLLAUDO Inspection Agency

### ZHEJIANG SHIDAI CASTING CO.,LTD

### INSPECTION CERTIFICATE ACCORDING TO

EN 10204 3.1

CUSTOMER: ALFA VALVOLE SRL ORDER N.: 000284

REPORT Nº: 20111020218 DATE 2011-10-20

	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
2539	100	Alfa10N DN25 UNDRILLED	3476 Rev.3 3467 Rev.3	
	ļ		#	GENOVA,ITAI
				MADE IN CHI
				C/NO.26
	ļ			LOT
				NUMBERS:201
	<u> </u>			020

### CHEMICAL ANALYSIS

ALLOY			C	Si	Mn	P	S	Ст	Ni	Mo			
A351 CF8M	REQUIRED	MIN	1					18.00	9.00	2.00			
		MAX	0.080	1.50	1.50	0.040	0.040	21.00	12.00	3.00			
HEAT NR.													
2539			0.058	0.61	1.15	0.030	0.007	18.35	9.24	2.12			
						1							
						$III\Lambda$		4		1			
						2	1 5						<b>1</b>
												1	
												1	
												1	1
			1		<b>1</b>		<u> </u>					1	
***			1		1		l	ļ -	<u> </u>	1	1		1

### **MECHANICAL PROPERTIES**

	YELD POIN	łΤ	TENSILE	STRENGTH	ELON	SATION	REDUCTION	ı	HARDN	ESS	IMPACT	TEST		
REQUIRED Rp 0.2% (Mp		(Mpa)	) Rmn(Mpa)		A %		Z %		HB		KV JO			
	min	205	>	485	min	30	min		>135	< 187	1	2	3	
HEAT NR.														
2539	228	}		525		43			1	52				
						Λ.								Γ
						116		1	7	· · · · · · · · · · · · · · · · · · ·				Г
						17/	1/2		1	··				1
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HEAT TREATEMENT
VISUAL EXAMINATION
TECHNICAL REQUIREMENT

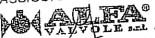
SOLUTION TREATEMENT 1080 °C WATER

ACCORDING MSS SP-55

NT EUROPEAN DIRECTIVE 97/23/EC PED

NACE MR01-75 / ISO 15156

ASSICURAZIONE QUALITA ASSICURAZIONE



M1B1

CCPIA CONFORME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL MANUAL STAC 15 Rev. 2



VALVOLE A SFERA - BALL VALVES VALVOLE A SFERA - BALL VALVES ROBINETS À BOULE - KUGELHÄHNE UNI EN ISO 9001:2008 Nr. 50 100 6417 Rev.01



**CERTIFICATO DI COLLAUDO** 



CE 0948-Modulo H



Certificato nr. PED-0948-QSH-321-10 Directive 94/9/EC - Article 8 (1) b) ii)

Seats Pneunatic Test

6 bar

Minimum Time 120s

ARIA

Air

MISURAZIONE COPPIA DI MANOVRA (A RICHIESTA) Torque measurement (upon request)

MATRICOLE

Identification No

ESAME VISIVO E DIMENSIONALE

Visual and Dimensional Test





NR 1203720/91/0

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 i.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-mall: alfavalvole@alfavalvole.it - www.alfavalvole.it

26/09/2012

DATA

Date			IN	SPECTION CERTIFICAT	TE		
				UNI EN 10204 3.1.			
CLIENTE	DESMET BAL	LESTRA SPA	_	_VS. ORDINE	121261 Com.2F11A/031	DATA	29/05/12
Customer DESCRIZIONE	VALVOLA A S	FERA		Your order nr. MATERIALE	WCB	QUANTITA'	2
Description TIPO	Ball Valves ALFA 10NF	DN 25 UNC	ANSI 150	Material MATRICOLE	1209588	Total Q.ty' DISEGNO	
Type AZIONAMENTO Operator	PNEUAMTIC A	ACTAUTOR TYPE GAT	185 SE +	tdentification Nr.  SPECIFICA DI COLLAUE Test Specification	00	Drawing API 6D/ISO14313 Procedure IOC 001 Rev.6	
SIGLE kem	TV63,1A. TV6	3.1B					
			ELEN	ICO CERTIFICATI MATE	ERIALI		
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q.ty Nr.	LOTTO MA		CERTIFICATO NR. Certificate nr.		
CORPO	WCB	2	M2176		20111224096		
Body CHIUSURA End	WCB	2	M2176		20111224096		
MALE TO SERVICE STREET, SERVIC							
			· · · · · · · · · · · · · · · · · · ·			-:-	2111
Alfa Valvole S	ole S.r.I. dichiara .r.I. declares tha	a che i prodotti e i mater at the products and the i	naterial use	ponenti utilizzati sono cor d for the Components are	nformì ai requisiti del vostro ordine a in conformity to order requireme	<sub>i,e</sub> ai disegni applical nts and Drawing app	licable
	T	I I I I I I I I I I I I I I I I I I I	1	1072 ANI MARCH AND	DEDICA DALEHMATICA CEDI	PROVA PNEUMA	TEA CORDO
PROVE IN PRESSIONE	PROVA	IDRAULICA CORPO	I PK	OVA IDRAULICA SEDI	PROVA PNEUMATICA SEDI	PROVA PINEUMA	ICA CURFO

ESITO PROVE FORNITORE Supplier

Result

Pressure Test

PRESSIONE

STRUMENTAZIONE

PRESSIONE VALVOLA

Testing apparatus

Pressure

FI LIIDO

Fluid



Body Hydraulic Test

30 bar

ПРО

PRESSIONE ATTUATORE

In accordo alla norma di riferimento

Actuator Supply

Type

PROVE FUNZIONALI (A RICHIESTA)

Functional Test (upon request)

Minimum Time 120s

ISPETTORE CLIENTE Customer Inspector

MANOMETRO

Pressure Gauge

Acqua con inibitore di ruggine al 3%,esente da Cloro,Fosforo

Water with 3% of rust inhibitor, free of Clorine, Fosfate

Positive Results ENTE DI COLLAUDO Inspection Agency

227-97

0+10 bar

COPPIA MISURATA

Torque measurement

Esito Favorevole

Body Pneunatic Test

ARIA

0+40 bar

67944 23-2010

Seats Hydraulic Test

22 bar

Minimum Time 120s

PRESSIONE

Pressure



DATA

VALVOLE A SFERA - BALL VALVES VALVOLE A SFERA - BALL VALVES
ROBINETS À BOULE - KUGELHÄHNE
Nr. 50 100 6417 Rev.01





CERTIFICATO DI COLLAUDO





CEC-05 / 2037-ADF178



NR 1203720/101/0

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 i.v. - Tei. 0290296206 r.a. - Fax 0290296292 E-mail: alfavalvole@alfavalvole.it - www.alfavalvole.it

DATA	26/09/2012	1	CERTIF	ICATO DI COL	LAUDO	NR 1	1203720/101/0
Date			IN	SPECTION CERTIFICAT	re ,		
				UNI EN 10204 3.1.	-		
					PARALEST AND ADDRESS OF THE PA	<del></del>	
CLIENTE	DESMET BAL	LESTRA SPA		VS. ORDINE	121261 Com.2F11A/031	_DATA _	29/05/12
Customer DESCRIZIONE	VALVOLA A S	FERA		Your order nr. MATERIALE	WCB	QUANTITA'	1
Description TIPO	Ball Valves ALFA 10NF	DN 25 UNC	ANSI 150	Material  MATRICOLE Identification Nr.	1209589	Total Q.ty'  DISEGNO  Drawing	
Type <b>AZIONAMENTO</b> Operator	PNEUAMTIC A	ACTAUTOR TYPE GA	TB5 SE +	SPECIFICA DI COLLAUE Test Specification	00	API 6D/ISO14313 Procedure IOC 001 Rev.6	
SIGLE ttem	HV64,10						
			ELEN	ICO CERTIFICATI MATE	RIALI		
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q.ty Nr.	LOTTO M	ATERIA PRIMA	CERTIFICATO NR. Certificate nr.		
CORPO	WCB	1	M2176		20111224096		
Body CHIUSURA End	WCB	1	M2176		20111224096		
							1 112
Alfa Valvo Alfa valvole S.	le S.r.l. dichiara r.l. declares tha	a che i prodotti e i mate at the products and the	riali del com material use	ponenti utilizzati sono cor d for the Components are	ıformi ai requisiti del vostro ordin e in conformity to order requireme	e,e ai disegni applica ents and Drawing app	oiii Hicable
PROVE IN PRESSIONE	PPOVA	A IDRAULICA CORPO	DR.	OVA IDRAULICA SEDI	PROVA PNEUMATICA SEDI	PROVA PNEUMA	TICA CORPO
Pressure Test		dy Hydraulic Test		Seats Hydraulic Test	Seats Pneunatic Test	Body Pseuna	
PRESSIONE		30 bar		22 bar	6 bar		
Pressure		mum Time 120s		nimum Time 120s	Minimum Time 120s		
FLUIDO	Acc	qua con inibitore di ruggine			ARIA	ARIA	
Etutal	1	16teles with 29/ of past lebits			Air	Δir	

VALVOLE .... ASSICURAZIONE QUALITA

ПРО

Туре

PRESSIONE ATTUATORE

In accordo alla norma di riferimento

According to spec. reference

Actuator Supply

PROVE FUNZIONALI (A RICHIESTA) Functional Test (upon request)

STRUMENTAZIONE

PRESSIONE VALVOLA

Testing apparatus

ESITO PROVE

Result FORNITORE

Supplier

ISPETTORE CLIENTE Customer Inspector

MANOMETRO

Pressure Gauge

ENTE DI COLLAUDO Inspection Agency

227-97

0+10 bar

COPPIA MISURATA

Torque measurement

Esito Favorevole

Positive Results

0+40 bar

67944 23-2010

I certificati di origine dei materiali sono disponibili presso Alfa Valvole Srl per la durata di 10 anni, secondo la Direttiva 97/23/CE "PED"
The certificates of origin for the material are available from AlfaValvole srl for a period of 10 years, according to the "PED" Directive 97/23/EC
Les certificats des matèriaux sont disponibles dans Alfa Valvole Srl pour 10 ans, selon la Directive 97/23/CE "PED"
Сертификаты происхождения материалов имеются в наличии и будут находится у компании Alfa Valvole srl в течении 10 лет, согласно директиве 97/23/СЕ "PED".
Los certificados de origen de materiales están disponibles en la firma Alfa Valvole Srl por un periodo de 10 años, según lo estipulado por la Directiva 97/23/CE "PED".

PRESSIONE

Pressure

MATRICOLE

Identification Nr.

ESAME VISIVO E DIMENSIONALE

Visual and Dimensional Test

MISURAZIONE COPPIA DI MANOVRA (A RICHIESTA)

### ZHEJIANG SHIDAI CASTING CO.,LTD

### INSPECTION CERTIFICATE ACCORDING TO

EN 10204 3.1

CUSTOMERALFA VALVOLE SRL ORDER N.: 001100

REPORT N°: 20111224096 DATE

2011-12-24

HEAT NR.	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
2648	393	Body Alfa10N DN25 UNDRILLED	3476 Rev.3 3467 Rev.3	
2649	195	Body Alfa10N DN25 UNDRILLED	3476 Rev.3 3467 Rev.3	
2108	4	Body Alfa10N DN25 UNDRILLED	3476 Rev.3 3467 Rev.3	<b>-</b>  .
2120	7	Body Alfa10N DN25 UNDRILLED	3476 Rev.3 3467 Rev.3	GENOVA, ITALY
2116	_1	Body Alfa10N DN25 UNDRILLED	3476 Rev.3 3467 Rev.3	MADE IN CHINA
				C/NO:2
			The stal	l rot_
				NUMBERS:20111224
				7
				1

### CHEMICAL ANALYSIS

ALLOY	<u> </u>		C	Si	Mn	P	S	Cr	NI	Mo	Cu	V	CE
A216 WCB	REQUIRED	MIN				<del></del>						-	 
	<u>]</u>	MAX	0.230	0.600	1.000	0.040	0.045	0.500	0.500	0.20	0.300	0.03	 0.430
HEAT NR.											1 -10-0	0,00	 0.400
2648			0.193	0.49	0.84	0.019	0.011	0.340	0.320	0.002	0.050	0.006	0.427
2649	<u> </u>		0.200	0.43	0.83	0.017	0.013	0.240	0.210	0.001	0.048	0.005	 0.405
2108			0.220	0.48	0.82	0.017	0.016	0.028	0.001	0.001	0.022	0.014	 0.366
2120			0.220	0.45	0.75	0.014	0.013	0.001	0.001	0.001	0.022	0.009	 0.349
2116			0.230	0.40	0.79	0.016	0.014	0.050	0.001	0.003	0.026	0.011	 0.376
	<u> </u>	ļ. <u>.                                   </u>					4 ji 44						 
	<b></b> .	<b>!</b>				i.	r <sub>e</sub> \	1 1					
	<u> </u>	<u> </u>									,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
_ <del> </del>		<u> </u>											
	<u>i                                      </u>	1	l i										 

### MECHANICAL PROPER TENSILE STRENGTH

	YELD POINT	TENSILE STRENGTH	ELONGATION	REDUCTION	HARDNESS	IMPACT TEST	•
REQUIRED	Rp0.2%(Mpa)	Rmn (Mpa)	A %	Z %	нв	KV JOULE	
	min 250	> 485	min 22	min 35	>135 < 187	1 2	3
HEAT NR.	<u> </u>						
2648	327	534	31	44	167	<del>                                     </del>	
2649	323	528	33	47	163	<del> </del>	<del></del>
2108	314	521	30	43	164		
2120	298	510	32	47	160	<del>   </del>	
2116	318	522	30	43	162		
			1	( P)		<del>   </del>	<del></del>
			1978				
						<del>                                     </del>	
				<del></del>		1	

HEAT TREATEMENT VISUAL EXAMINATION TECHNICAL REQUIRE-

MENT

NORMALIZED

ACCORDING MSS SP-55 EUROPEAN DIRECTIVE 97/23/EC PED

NACE MR01-75 / ISO 15156

SIGNATURE

ASSICURAZIONE QUALITA' RML Nr.

COPIA CONFORME ALL'ORIGINALE COPY COMPLYING WITH THE ORIGINAL WALVOLE STAC 13 Rev. 2.





**CERTIFICATO DI COLLAUDO** 







VALVOLE A SFERA - BALL VALVES
ROBINETS À BOULE - KUGELHÄHNE
UNI EN ISO 9001:2008
Nr. 50 100 6417 Rev.D1
Certificato or. PED-0948-QSH-321-10
Directive 94/9/EC - Article 8 (1) b) ii)

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Soc. € 1.560.000,00 l.v. - Tel. 0290296206 r.a. - Fax 0290296292 E-mall: alfavalvole@alfavalvole.it - www.alfavalvole.it

DATA	26/09/2012			FICATO DI COL	NR <u>1203720/111/</u>		
Date			. IN	ISPECTION CERTIFICA UNI EN 10204 3.1.	TE	manufacture	
CLIENTE	DESMET BAL	LESTRA SPA		VS. ORDINE Your order nr.	121261 Com.2F11A/031	DATA	29/05/12
Customer DESCRIZIONE Description TIPO	VALVOLA A S Ball Valves ALFA 10NF	BFERA DN 150 UNC	ANSI 150	MATERIALE  Material  MATRICOLE	CF8 1209590	QUANTITA'Total Q.ty' DISEGNO	2
Type  AZIONAMENTO  Operator		ACTAUTOR TYPE G		Identification Nr.  SPECIFICA DI COLLAU  Test Specification		Drawing API 6D/ISO14313 Procedure IOC 001 Rev.5	
SIGLE Item	KV63,2A, KV6	33.2B		•			
•			ELEN	ICO CERTIFICATI MAT	ERIALI		
PARTICOLARE Valve Part	MATERIALE Material	QUANTITA NR. Total Q.ty Nr.	LOTTO M Raw Material in	ATERIA PRIMA	CERTIFICATO NR. Certificate nr.		
CORPO	CF8	2	M0206		20100129168		
Body CHIUSURA End	CF8	2	M0833		20100909227		
SFERA Ball	CF8	2	M0600		2010040101-6		
Δlfa Va	alvole S.r.I. dichiar	a che i prodotti e i ma	iteriali dei com	ponenti utilizzati sono co	nformi ai requisiti del vostro ordir	ne e ai disegni apolical	oili
Alfa valvole	S.r.l. declares the	at the products and th	ie material use	ed for the Components ar	re in conformity to order requirem	ents and Drawing app	licable
PROVE IN PRESSIONE	PROV	A IDRAULICA CORPO	PF	ROVA IDRAULICA SEDI	PROVA PNEUMATICA SEDI	PROVA PNEUMA	

PROVE IN PRESSIONE	PROVA IDRAULICA CORPO	PRO	VA IDRAULICA SEDI	PROVA PNEUMATICA SEDI	PROVA PNEUMA	TICA CORPO		
Pressure Test	Body Hydraulic Test	Sa	ents Hydraulic Test	Seats Pneunatic Test	Body Pneun	atic Test		
PRESSIONE	30 bar		22 bar	6 bar				
Pressure	Minimum Time 300s	Min	imum Time 300s	Minimum Time 300s				
FLUIDO	Acqua con inibitore di ruggine a	l 3%,esente da	Cloro,Fosforo	ARIA	ARIA			
Fluid	Water with 3% of rust inhibite	or, free of Clorin	e, Fosfate	Air				
STRUMENTAZIONE	TIPO	MANOMETRO	)	MATRICOLE	227-97	0+40 bar		
Testing apparatus	Туре	Pressure Gauge		Identification Nr.	0+10 bar	67944 23-2010		
F	ROVE FUNZIONALI (A RICHIESTA)			MISURAZIONE COPPIA DI MANOVRA (	A RICHIESTA)			
	Functional Test (upon request)		Torque measurement (upon request)					
PRESSIONE VALVOLA	PRESSIONE ATTUATORE		PRESSIONE		COPPIA MISURATA			
Valve Pressure	Actuator Supply		Pressure		Torque measurement			
ESITO PROVE	In accordo alla norma di riferimer	nto	ESAME V	ISIVO E DIMENSIONALE	Esito Favorevole			
Result	According to spec, reference		Visua	I and Dimensional Test	Positive Results			
FORNITORE		ISPETTORE C	LIENTE		ENTE DI COLLAUDO			

Supplier



Customer Inspector

Inspection Agency

## ZHEJIANG SHIDAI CASTING CO.,LTD

#### INSPECTION CERTIFICATE ACCORDING TO EN 10204 3.1

CUSTOMER: ALFA VALVOLE SRL ORDER N.:

901834

REPORT N°: 20100129168 DATE 2010-1-29

C 16 Rev. 2

HEAT NR.	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
891	50	BODY A1N/A64/A68 DN150 Undrilled	5751 Rev.1	
		127 Karana		GENOVA, ITALY
				MADE IN CHINA
				C/NO. 18,19
				LOT
				NUMBERS:20100
				131

#### CHEMICAL ANALYSIS

ALLOY				С	Si	Mn	Р	S	Сг	Ni	Mo	T	ſ <u> </u>		<u> </u>
A351 CF8	REQUI	RED	MIN						18.00	8.00					
			MAX	0.080	2.00	1.50	0.040	0.040	21.00		0.50	<del>                                     </del>			
HEAT NR.													1	!	l
891		• •••		0.060	0.54	0.90	-0.032	0.007	18.30	8.20		i .		1	<u> </u>
								770	-					<b> </b>	
	_						1		PAR =						
•							17		<u> </u>	41					
			]							<u>d</u>					
															<b></b>
	_														
								:							

#### **MECHANICAL PROPERTIES**

p 0.2% (Mp in 205 221			Z % min	нв >135 < 187 151	KV JOL		3
in 205	> 485		min		1		3
221	524	44	-	151			
221	524	44		151		<del></del>	
				I		i	
			1 Harris	43.0			
				<b>1</b>			
					-		
					1 15315 4 T 4 T 4		

HEAT TREATEMENT

SOLUTION TREATEMENT 1080 °C WATER

VISUAL EXAMINATION

ACCORDING MSS SP-55 TECHNICAL REQUIREMENT EUROPEAN DIRECTIVE 97/23/EC PED

NACE MR01-75 / ISO 15156

ASSICURAZIONE QUALITA' RMLSIGNATURE

M0206

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## ZHEJIANG SHIDAI CASTING CO.,LTD

### INSPECTION CERTIFICATE ACCORDING TO

EN 10204 3.1

CUSTOMER: ALFA VALVOLE SRL ORDER N.:

901834 REPORT N°: 20100909227 DATE 2010-9-9

HEAT NR.	Q'TY	DESCRIPTION- SIZE	DRAWING NR.	MARKING
265123	7	CAP A10N 150 UNDRILLED	5791 Rev.2	
265033	1	CAP A10N 150 UNDRILLED	. 5791 Rev.2	· ·
				GENOVA, ITALY
			•	MADE IN CHINA
		M 125 7		C/NO. 25
				LOT NUMBERS:2010
				909

#### **CHEMICAL ANALYSIS**

CHEMICAL.	ANALYSIS					-/ -×:[as	4							
ALLOY		1	С	Si	Mn	P	S	Cr	Ni	Мо		T	T	T
A351 CF8	REQUIRED	MIN					· ••;	18.00	· 8.00			1 -	<del> </del>	+
-		MAX	0.080	2.00	1.50	0.040	0.040	21.00	11.00	0.50	<del>-</del>	+	<del>                                     </del>	+
HEAT NR.					:.		a open				I	<u> </u>	ــــــــــــــــــــــــــــــــــــــ	<u></u>
265123			0.057	0.51	0,90	0.032	0.005	18.30	8.10		· ·	T	T	Т .
265033			0.059	0.49	0.74	0.033	0.007	18.30	8.20				<del>                                     </del>	<del>                                     </del>
													<del> </del>	1
					1 7	772	2		-				1	1
·		<u> </u>				75						1 -	<b>†</b>	1
			<u>                                     </u>		,						-			1
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	<del>                                     </del>						•							1
		<u> </u>												$\top$
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the management of the

#### **MECHANICAL PROPERTIES**

€.	YELD POI			E STRENGTH	ELO	IGATION	REDUCTION	HARD	NESS	IMPACT	TEST		
REQUIRED	Rp 0.2% (Mpa				A %		· Z%	НВ		KV JOULE			
	min	205	>	485	min	· 35	min	>135	< 187	1	2	3	
HEAT NR.				•			. 50%						1
265123	219	)		522		48	#4 *		149				1
265033	226			525		45		<del>                                     </del>	152				┢
					-								$\vdash$
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HEAT TREATEMENT VISUAL EXAMINATION

SOLUTION TREATEMENT 1080 °C ACCORDING MSS SP-55

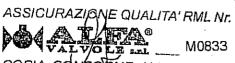
TECHNICAL REQUIREMENT EUROPEAN DIRECTIVE 97/23/E NACE MR01-75 / ISO 15156

VALVOLE STAC 16 Rev. 2

1

**:**:

**SIGNATURE** 



M0833

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Doc No. 2-15 Annex22

PURCHASER:

STANDARD: PRODUCT:

INSP.RESULT:

MATERIAL

AF-100030

PrEN12266-1 Ball ASTM A351 CF8

Material Test Certificate According to EN 10204 3.1

P/O NO.: DATE:

2010/04/01

000160 rev.0

2010040101-6 CERTIFICATE NO.:

> 7F-2.No.408. Sec.2, Nantun Rd Tatchung, **Anson Flow Corp**

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Taiwan/R

1ENT	MP.	Z	MT PRPOF	MT PRPOF	MT PRPOF						5/3	1	1	1	,
HEAT TREATMENT	SYMBOL, TEMP.	& DURATION	SEE HEAT TREATMENMT PRPOF	SEE HEAT TREATMENMT PRPOF	SEE HEAT TREATMENMT PRPOF				Impact Test (J)		6	1	1	ı	
HEV	S	~	SEE HEAT	SEE HEAT	SEE HEAT				Impact		2	ŀ	1	ı	
PENETRATION	RADIOGARPHIC	EXAMINATION	NA	NA	NA						1	-	i	1	
PENET	/RADIOC	EXAM	-		_			Hardness	(HB)		>135	170	174	174	-
rest	<b>-</b>	<u>د</u>						Elo.	%		≥35	39	38	33	
BACK SEAT TEST	AIR TEST	(BAR/SEC)	AN	NA	NA	:		Вp	N/mm <sup>2</sup> N/mm <sup>2</sup>	in 0.2% in 1.0%	NA	NA	NA	AN	
BACK	_	<u></u>					·	Rp	N/mm²	in 0.2%	≥205	238	234	235	
SHELL TEST		(BAR/SEC)	¥.	NA NA	NA			TS	N/mm²		≥485	512	515	516	
SHE		(BAF						Mo	%		≤0.50	0.120	0.140	0.165	
VISUAL &	TIONAL	INSPECTION	GOOD	GOOD	GOOD			ට්	%		18.0-	18.210	18.690	18,380	
VISU	DIMENTIONAL	INSPE	8	8	90			ï	%		8.0-11.0	8,250	8.270	8.120	
	T NO.		90	NO	OP			ω	%		≤1.50  ≤0.040  ≤0.040  8.0-11.0   18.0-	0.0030	0.0020	0.0048	
	HEAT NO.		0	0	0			Д	%		≤0.040	660.0	0.032	0.031	
	αTY	PCS	15,448	288	120			Mn	%			1.090	1.010	1,150	
	SIZE		DN25	DN150	DN200			:5	%		≤2.00	0.470	0.460	0.405	
	Š		ă	NO	DN			ပ	%		≤0.08	0.039	0.045	0.046	
NOMINAL	PRESSURE		1		,			MATERIAL	CHARGE NO.			go	NO	ОР	
	ITEM NO.		-	2	6	4	ı		CN MEE			<b>-</b>	2	က	4

JRT JRT

WE HERE BY CERTIFY THAT THE PRODUCT DESCRIBED HERE IN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESUETS SHOWN HERE IN ARE CORRECTLY TRANSFERRED FROM ORIGINAL

INSPECTION RECORDS.

HEAT TREATMENT:

Q.A REPPESENTATIVE CFBM/CFSM/CFB/1.4409/1.4308/1.4552/1.4581: Solution annealed to 1050-1100°C, 1.4408: Solution annealed to 1080-1150°C, 2 hours minimum and guenched in water. WCC: Normalized to 930°C, 1.0619; Normalized to 900-980°C, 2 hours minimum. Cooling in air. Stress relief to 650°C, 2 hours minimum. Cooling in air.

SION HOLL MONEY

of dust once

7F-2, No. 408, Sec. 2 Nantun Hd., Taichung, Taiw. 7EL:886-4-2472-099( 

> COPY COMPLYING WITH THE ORIGINAL COPIA CÓNFORME ALL'ORIGINALE M0600

ASSICURAZJONE QUALITA' RML Nr.





### CLIENTE:

## DESMET BALLESTRA SPA

P.O nr. 121261 COM.2F11A/031

Declaration of Conformity according 97/23/CE "PED" Dichiarazione di conformità alla 97/23/CE "PED"







CERTIFICATION OF PED-0640; OSH-371-10



CEC:06 / 2037-ADE 176 Dicatio 949:65 - Adicto 8 (1) b) 9



VALVOLE A SFERA BALL VALVES ROBINETS À BOULE - KUGELHÄHNE

20010 CASOREZZO (MI) - VIALE DEL LAVORO, 19 Cap. Socs C 1:560.000 i.v.- Tel 0290296206 ra-Fax 0290296292 E-mail: hfb://doi/a/doi/a/doi/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi/a/doi



## DICHIARAZIONE DI CONFORMITA' Declaration of Conformity – Declaration de Conformité

#### "PED" Directive 97/23/CE

La sottoscritta dichiara che i seguenti prodotti sono stati progettati, fabbricati e collaudati in conformità ai requisiti della Direttiva 97/23/CE "PED" e provvisti di marcatura CE in accordo.

We hereby declare that the following products have been designed, manufactured and tested in compliance with the Directive 97723/CE and CE marked accordingly.

Descrizione apparecchiatura : Description of the equipment Valvola a sfera a sedi soffici a stelo nudo, con comando manuale a leva, framite riduttore manuale o attuatore pneumático, idraulico od eletírico modelli : ALFA 10 / 10N / 10NF / 10HP / 103 / 20T / 20R / K20T / 22EV / 24 / 24K / 50 / 54 / 58 / 506 / 60 / 64 / 68 / 606 / 609 / 615 / 625 / 30 / 32 / T2 / T3

Soft seated ball valve with bare stem, lever operation or complete with manual gear or pneumatic, hydraulic or electric actuator or of the following models:

ALFA 10 / 10N / 10NF / 10HP / 103 / 20T / 20R / K20T / 22EV / 24 / 24K / 50 / 54 / 58 / 506 / 60 / 64 / 68 / 606 / 609 / 615 / 625 / 30 / 32 / T2 / T3

Secondo le limitazioni dimensionali e di condizioni di esercizio descritte nei relativi Manuali d'uso e Manutenzione.

In accordance to the limitations described in the relevant instruction and Use Manuals.

Procedura di Conformità utilizzata Conformity Assessment procedure used Modulo H (Categorie II e III) Module H (Category II and III)

Organismo notificato incaricato della valutazione di conformità

Notified Body charged of the conformity assessment

TUV Italia srl Vla Carducci 125, Pal.23 20099 Sesto San Glovanni Mi Italia

I.S.P.E.S.L. Code Case M/S - ISO 13445-3

Organismo No. Notified Body No.

0948

Certificato di approvazione del Sistema Qualità no.

Quality System Approval certificate no.

ASME II Part.D - ASME VIII DN:1 - ASME B16.34 ASME III Subsect, NB - ASME VIII DIV.1 App.L - API GFA API 607 - EN ISO 10497 - API 60 - BS5351

Norme applicate alla progettazione, fabbricazione e collaudo Applicable Standards on design, manufactu

Applicable Standards on design, manufacturing and lesting

Altre Direttive Europee applicate all'attrezzatura Other European Directives applied to the

equipment Casorezzo, lì 13/10/2010 94/9/CE "ATEX" Gruppo e Categoria di appartenenza
Group and Category

Ex II 2 GD c T6 X

: PED-0948-QSH-321-10

Persona Autorizzata dal Costruttore nella CEE Authorized Person for the Manufacturer wilhin E.C

6ig. G.C. Rossi

Codice Fiscale / Part IVA IT 00828040154 - R.E.A. n. 820580 C.C.I.A.A Milano - Albo Operatori con l' Estero MI 115739 - Registro Imprese N. 146.108 Tribunale di Milano





### CLIENTE:

## DESMET BALLESTRA SPA

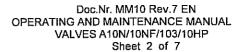
P.O nr. 121261 COM.2F11A/031

Valves installation-operation-maintenance manuals Manuali d' uso e manutenzione delle valvole



### OPERATING AND MAINTENANCE MANUAL ALFA WAFER BALL VALVES Models ALFA 10N / 10NF / 103 / 10HP

IND	EX	PAGE
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2.	Assembly	3
3.	Maintenance	3
4.	Testing	3
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6.	Warnings and use limitations	4
7.	Trouble shooting	6





#### 0. TECHNICAL DATA

#### 0.1 MANUFACTURER

#### ALFA VALVOLE S.r.I.

V.le del Lavoro 19 - 20010 CASOREZZO (MI) - ITALY

Ph. +39-0290296206 Fax. +39-0290296292

e-mail alfavalvole@alfavalvole.it

#### 0.2 ALLOWED USE AND LIMITS

Operators involved in the storage, mounting, use and/or maintenance of our products are requested to have sufficient skill and experience in such a kind of equipments. It's user responsibility to guarantee this skill is met.

Service: ON-OFF and deviation of liquids e gases (A103 type valves, only)

Fluids: liquids e gases Group 1 (dangerous), not unstable, according to the EC Directive 97/23/EC "PED" - Category III

(Ex)

Use in potentially explosive atmospheres: II 2 GD c T6 X according to the EC Directive 94/9/EC "ATEX"

#### Minimum guaranteed tightness limits on brand new valve:

Emissions to atmosphere Hydrostatic Body Test Hydrostatic Seat Test Pneumatic Seat Test on request, according to TA-LUFT and/or ISO 15848-1 requirements
(1,5 x Maximum working pressure at room temperature)
Zero Leakage
(Air , 6 bar )
Zero Leakage
Zero Leakage

"Fire Safe" features: on request, according to ISO 10497 / API 607 / API 6FA / BS 6755, (A103 type valves, excluded).

Model	ALF	A 10N A 10NF A 103	ALF	A 10N A 10NF A 103	ALF	FA 10N A 10NF FA 103	ALF.	A 10HP A 103		
Class		10-16 SI 150	PN	25- 40	AN	ANSI 300		N63 1100 81 600		
Nominal Diameters		10÷200 3 DN15÷150)		0÷200 3 DN15÷150)		15÷200 3 DN15÷150)	DN10÷100 (ALFA103 DN15÷100)			
Maximum working pressure at room	10	PN10	25	PN25		51	63 100 63	PN63 PN100 DN>80		
temperature	16	PN16	40	PN40		31	102	A.600		
(bar)	20	A.150	40	PN40			63	DN>80		
							63	PN63		
Maximum working		8		8		15	80 63	PN100 DN>80		
pressure at maximum temperature							80 63	A.600 DN>80		
(bar)	Pressure values between room temperature and maximum temperature vary depending of characteristics of used seats/seals materials.  Please contact ALFA VALVOLE Technical Dept. for more information.									
	200°C			DN10÷50			90°C	DN10÷50		
Maximum working	180°C		, ,,,,,,,,	DN65-80						
temperature	160°C 120°C			DN100÷150 DN200			70°C	DN65÷100		
	-29°C**	for carbon ste	eel A105 / A	216 WCB valv	e bodies					
Minimum working and room temperature	-40°C**			2 / A352 LCB		with impact t TR* ≤ 21°C	est verificati	on wnen		
•	-40°C**	for stainless	steel valve l	oodies		without impa	ct test verific	cation		
Maximum simultaneous working conditions		Please contact ALFA VALVOLE Technical Dept.								

<sup>\*</sup>TR = design temperature, for impact test verification, according to I.S.P.E.S.L. Code Case M Table M.14.2 and EN 13445 standard.

The body thickness is assigned so that the design temperature, for impact test verification according to I.S.P.E.S.L. Code Case M Table M.14.2 and EN 13445 standard, are above 21 ° C.

\*\* Other restrictions imposed from the material of the seat ring, the gasket material and the nominal diameter of the valve will be indicated on the nameplate attached to the valve body.

Table of nominal dimensions of valves

						i abic of ii	Gimma ai	11101101011	3 01 14114	_				
	DN	10	15	20	25	32	40	50	65	80	100	125	150	200
ì	Ø"	3/8"	1/2"		1"	1.1/4"	1.1/2"	2"	2.1/2"	3"	4"	5"	6"	8"



#### 0.3 SPECIFIC DESIGN PROCEDURES

END CONNECTIONS	Flanged ANSI/DIN/UNI/EN with blind or straight screwed holes
BODY THICKNESS	ASME VIII Div.1 – ASME B16.34 – DIN 3840
BOLTING DESIGN	ASME VIII Div.1 – ASME B16.34 (Split Body only)
SCREWED CONNECTION DESIGN	ASME B16.34 (Screwed Connector only)
FLANGE DESIGN	ASME VIII Div.1 (Split Body only)
SIMULTANEOUS LOADS	Pressure, Bending, Axial Loads from piping
WIND LOADS	Negligible, according to ASME III Div.1 Subsect.NB
EARTHQUAKE LOADS	Negligible, according to ASME III Div.1 Subsect.NB
EATICIE from On Off storting quales	Negligible, according to ASME III Div.1 Subsect.NB
FATIGUE from On-Off starting cycles	(see the maximum number of operating hours)
FATIGUE from service pressure	Negligible, according to ASME III Div.1 Subsect.NB
fluctuation	(see the maximum number of operating hours)
	Function of actual simultaneous working conditions and fluids but anyway not
	longer than:
MAXIMUM LIFE IN SERVICE HOURS	100.000 ( see para 3.1 for recommended periodical inspections);
	50.000 operations of opening/closing of the valve (liquid service)
	5.000 operations of opening/closing of the valve ( gas service )
AVAILABLE CORROSION	1.5 mm min. (carbon steel valves only)
OVERTHICKNESS	1.5 Hill Hill. (Calual) Steel valves only/
ANTISTATIC FEATURES	according to API 6D app. B5

#### 1. TRANSPORT, HANDLING AND STORAGE

#### 1.1 TRANSPORT AND HANDLING

Valves must be transported and handled maintaining the ball in the open position. DO NOT remove the protection caps from the ends until the valve is to be mounted in line.

Avoid impacts against obstacles that may damage the stem or the auxiliary connections (drains, sealant injectors, vents).

#### 1.2 STORAGE

Valves with carbon steel or stainless steel bodies must both be stored with ball in the OPEN position and in a location dry and free from fumes, gas or corrosive vapours.

For long storage periods it is advisable to cover the external surface with a layer of protective wax (Tectyl) or close the valves in polythene bags.

#### 2. ASSEMBLY

2.1 All valves are bi-directional (A103 type valves, excluded) and supplied ready to use. Valves can be placed with stem oriented to any direction.

ATTENTION: remove the protective caps from the valve ends before connection to pipeline or the cap from the inlet side of the fluid.

Ensure that all auxiliary connections, if any, (lubricators, drains, vents) are free of damage and properly tightened.

#### 3. MAINTENANCE

3.1 A general control of the valve is advisable every 2 years of functioning or every 5.000 opening and closing cycles. The execution of eventual intervention must follow the procedure illustrated on the attached card.

In occurrence of dirty fluids interception, more frequent periodic checks are recommended, please contact ALFA VALVOLE Technical Dept for further information.

ATTENTION: it's user's responsibility to maintain the safety features of the product and of their components in case of maintenance / repair on their own.

#### 4. TESTING

4.1 Before carrying out of any test, to verify there are no problems in the movement of the ball, make at least one complete stroke of opening and closing.



#### **4.2** Valve must be tested using the following procedure:

- a) Place the ball in a semi-open position
- b) Pressurise the valve body, by water, with a pressure 1,5 times the maximum operating pressure at room temperature ( see table at para 0.2 )
- c) Verify that there are no leaks from the body seals
- d) Release the pressure
- e) Close the valve
- f) Pressurise the first seat with water at a pressure 1,1 times the maximum operating pressure at room temperature ( see table at para 0.2 )
- g) Verify that there are no leaks from the end opposite to that pressurised
- h) Release the pressure
- i) Pressurise the second seat (if present) with water at a pressure 1,1 times the maximum operating pressure at room temperature ( see table at para 0.2 )
- ) Verify that there are no leaks from the end opposite to that pressurised
- Release the pressure and drain the valve completely of any water
- 1) Repeat the tests described in points f) and i) using air at 6 bar and verifying that there are no leaks from the end opposite to that pressurised



**WARNING**: during the test, valve must be firmly blocked on the test rig to avoid any possible danger to personnel caused by the pressure.

ALFA VALVOLE declines all responsibility regarding damage to things or people following to tests carried out in accordance with the above procedure.

ATTENTION: while considering the above information sufficient for proper execution of the maintenance of the valve, ALFA VALVOLE not give any warranty on the outcome of the intervention, not extended warranty, unless the action is performed by ALFA VALVOLE personnel at its workshops.

#### 5. HOW TO ORDER SPARE PARTS

5.1 User must specifies, when ordering spare parts:

Valve model Nominal diameter Pressure class

Identification number or name of the part to be substituted (ref. attached card)

Material of the spare part (or of the original part)

Original order number or serial number of the valve

#### 6. WARNINGS AND USE LIMITATIONS

6.1 Here described valves are intended for use with clean or slightly abrasive fluids (without solid particles).

ATTENTION: their use with abrasive fluids can cause the rapid decay of the sealing characteristics of the valve during operation;

any presence of solids or the use with hardening fluids which harden can cause a quick reduction of the tightness and of the operability.

6.2 User must provide adequate methods to eliminate risks associated with the temperature of the external surface of the valve during operations.



**ATTENTION**: User must evaluate the valve body surface temperature when the outside ambient has potentially explosive conditions.

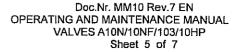
It is not possible to identify the body surface temperature in accordance to the Directive 94/9/EC "ATEX" because it is a function of handled fluid temperature (surface temperature of valve body tends to reach the temperature of intercepted fluid).

User must provide appropriate methods to reduce the surface temperature of the valve body when the temperature of the intercepted fluid exceeds T6 limit.

During services with fluids at room temperature and in the presence of repeated maneuvers, at intervals not greater than 1 operation every 10 seconds, the valves do not exceed 60 ° C (T6 class temperature, according to EN 13463-1).

6.3 Valves must be used within maximum and minimum values of temperature and pressure above indicated or in nameplate. For further details about maximum allowable pressure/temperature combinations please contact ALFA VALVOLE technical department.

ATTENTION: User must provide suitable means against the exceeding of the operating limits.





6.4 Before carrying out of any intervention on ball valve, verify that there is no pressure in the body cavity by carrying out a complete opening and closing cycle.

**6.5 ATTENTION:** before removing any service connection such as drain plugs, vents, sealant injectors or stem, make sure of the absence of pressure inside the body cavity of the valve.



The removal, even if accidental, of drain plugs, vents or sealant injectors may cause a dangerous sudden discharge of pressure to the atmosphere and the expulsion of the organ itself.

Before carrying out this operation however, we recommend the use of personal safety equipment.

Before doing any intervention, ensure that no dangerous residue is contained in the valve body.
 The valves must be completely drained and cleaned in the cavity around the ball before any intervention.



WARNING: any entrapped residue will be expelled from the ends of the valve.



7 ATTENTION: when installing the valve, User must ensure the same equipotential electrical level between valve and piping system in order to prevent electric shock.



- .8 ATTENTION: when used in a potentially explosive area, for the purposes of Directive 94/9/EC "ATEX", User must provide appropriate means to avoid impacts of metal parts against the valve body during assembly, service time and maintenance.
- 6.9 Quick closure of the valve against high speed flows can cause overstressing of the seats due to "water hammer", which can determine reduction of valve tightness.

ATTENTION: User must provide suitable means against the effects of "water hammers".

6.10 The maximum number of operating hours can be influenced by the real operating conditions.

**ATTENTION**: User must evaluate the minimum time between inspections, basing on actual operating conditions, in particular in relation to the degree of corrosion/year used in the piping design with reference to the corrosion overthickness (see para.0.3 of this manual).

Time between inspections should not be longer than 2 years or 5.000 full open and close strokes.

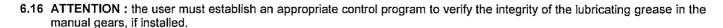
6.11 ATTENTION: the user must carry out periodic inspections in order to eliminate any accumulation of powder greater than 5 mm in correspondence with the sliding surfaces of the stem/valve body and actuator pinion /actuator body.



- 6.12 ATTENTION: the functioning of valves complete with actuators is not guaranteed in the event of an earthquake due to possible misalignment of connection between valve stem and actuator pinion.
  Valve and actuator assembly is calculated for a maximum earthquake magnitude incrementing 40% the dead weight of
  - actuator and valve cover.
- **6.13 ATTENTION:** assembling of actuators for valve operation different to that supplied is not allowed without previous approval from the manufacturer.
- **6.14** Actuators, any type, are not suitable to resist against external fire conditions.

ATTENTION: actuators fire-safe properties can be obtained by use of fire-protection boxes enabling, to avoid system (valve+actuators) malfunctions.

6.15 ATTENTION: cabling of actuators and electrical accessories should be realized after valve mounting to piping system and according to the specifications showed in the relevant use and maintenance manuals.



- 6.17 ATTENTION: split body type valves are suitable for resisting to reduced axial forces from piping system.
  If necessary, require maximum values of allowed axial loads from ALFA VALVOLE technical department.
- **6.18 ATTENTION**: valves can be used as end-type valves only by specific customer request and for working pressures not exceeding 77% of the stated maximum working pressure at room temperature.



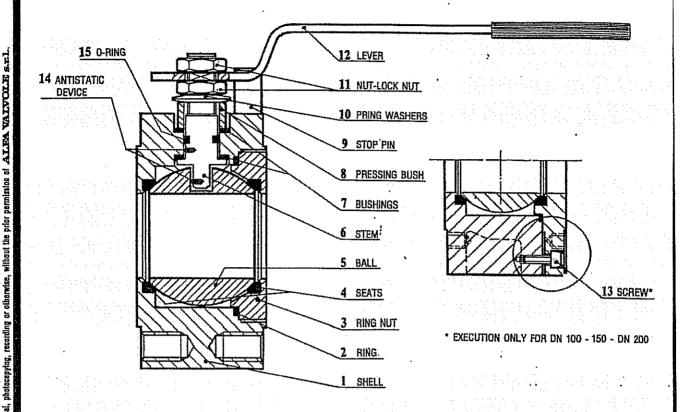
#### 7. TROUBLE SHOOTING

Malfunction	Possible cause	Action
Leakage through the valve	Ball surface damage	Replace the ball
	Seat damage	Replace the seats or try with injection of sealant grease (trunnion mounted construction only)
	Not complete closure	Check Open/Close limits and settings
Ball movement not regular (actuated valves)	Dirt between ball and seats	Flush the inside, operating the valve 5 times
	Dirt between ball and body cavities	Flush the inside, operating the valve 5 times
	Not sufficient air supply flow	Confirm working conditions are as per request
	Not sufficient air discharge	Include quick exhaust valve
Valve torque too high	Seat damage	Replace the seats
	Dirt between ball and seats	Flush the inside operating the valve 5 times
	Dirt between ball and body cavities	Flush the inside operating the valve 5 times
	Excessive Pressure or Temperature	Confirm working conditions are as per request
Stem leakage	Stem nuts loose	Tighten stem nuts
	Damaged stem seal surfaces	Replace stem
	Damaged stem seals	Replace stem seal or try with injection of sealant grease (trunnion mounted construction only)
Body seal leakage	Gasket damage	Replace gaskets
	Excessive Pressure or Temperature	Confirm working conditions are as per request
	Excessive load from piping system	Verify piping system architetture
Excessive valve noise	Error in valve sizing	Confirm valve sizing
	Not complete opening	Check Open/Close limits and settings
Fail in valve movement	solenoid valve fail	Confirm power supply
after electrical input		Replace the solenoid
(actuated valves)		
Fail in limit switch signal	Uncorrect settings	Check Open/Close settings
	Limit switch is broken	Replace limit switch
	Uncorrect power supply	Confirm working conditions are as per request

#### MAINTENANCE CARD

## ALFA 10

ALFA 10 N - 10 NF - 10 HP - 103



PREMISE regarding ball valves type ALFA 10. ALFA 11 and ALFA 103
ALFA ball valves type 10 - 10F - 10H.P. - 103 - 11 - 11F derive from a common design, therefore the maintenance card is shared by all six models.

#### REPLACEMENT INSTRUCTIONS FOR WORN OUT PARTS

1. Remove the valve from the pipe-system.

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reserved.

- Clean the residual piping product from valve, especially if toxic or harmful.
- 3. Block the valve in a parallel-law vice.
- 4. Rotate the Ball in "closed position" by shifting the Lever (part n. 12).
- Countersign the position of Shell-Ring nut, marking a reference line with a marking tool.
- Unscrew and remove the Ring nut (part n. 3) from Shell with a pin spanner. Use a pin spanner from DN 10 to DN 125 and an hexagonal socket spanner from DN 150 to DN 200.
- Raise and remove the Ring (part n. 2) with an extractor tool.
- Remove the Ball (part n. 5) inspect its spherical surface and in case of furrows or damages, replace the Ball.
- Raise and remove the two Seats (part n. 4) with an extractor tool. Clean the seats carefully and in case of furrows or damages replace them.

- Unscrew and remove the Nuts (parts n. 11) from the driving Stem (part n. 6).
   Remove the Bushes (parts n. 7).
   Remove the Spring Washers (parts n. 10).
  - Remove the Stem from inside. Inspect the worn out conditions of Stem, Bushes, etc., and replace the damaged ones.
- Reassemble the Stem from inside and the other parts proceeding contrary to disassembly.
- 12. Place the Seats in their housing slots.
- Insert the Ball into the valve Shell and cautiously accomplish a few manoeuvres to settle and assure the Ball rotation on its housing.
- 14. Place the Ring in position between Shell and Ring nut.
- Screw the Ring nut onto Shell with a pin spanner or a socket spanner up to marked reference line.
- 16. Check the Ball rotation resistance. The power resistance has to be homogeneous during the "opening or closing" manoeuvre of the valve.



#### SuperNova Series S050 ÷S200

Rack & Pinion AUTOMAX Actuators
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## Installation, Operating & Maintenance Instructions.

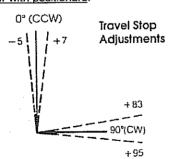
All actuators are factory lubricated for life, but still should be protected from the elements and stored indoors until ready for use. The ports of the actuator are plugged as supplied from the factory. In case the actuators are stored a long period before installation, it would be a good practice to stroke the actuators before mounting. Prior to assembly, check the mounting surfaces, the stem adaptor and the bracket to assure proper fit.

Manually open and close the valve to insure freeness of operation. Be sure the valve and actuator rotate in the same direction and are in the same position. Secure the valve with the stem vertical. Bolt the bracket to the valve and place the stem adaptor on the valve stem. Position the actuator over the valve and lower to engage the stem adaptor to the actuator shaft.

Continue to lower until the actuator seats on the bracket mounting surface. In order to align the bolt holes, it may be necessary to turn or stroke the actuator a few degrees and/or adjust the actuator travel stops. Bolt the actuator to the bracket.

After consulting the valve manufacturer's recommendations, adjust the travel stop bolts of the actuator for the proper open and closed valve positions. Pneumatically stroke the actuator several times to assure proper operation with no binding of the stem adaptor. If the actuator is equipped with limit switches or other accessories, adjust them at this time.

To prolong actuator life use only clean, dry plant air. Lubricated air is not required, however it is recommended particularly for high cycle applications. <u>Do not use lubricated air with positioners.</u>



Actuator	Endcap Screw	Adjustment Bolt	Spring Color
	Socket Size	Šocket Size	Code
S050	4 mm	3 mm	White
S063	5 mm	4 mm	Light green
S085	6 mm	5 mm	Blue
S100	6 mm	6 mm	Red
S115	6 mm	6 mm	Yellow
S125	8 mm	6 mm	Grey
S150	8 mm	8 mm	Dark green
S175	10 mm	8 mm	Purple
S200	12 mm	8 mm	Orange

Travel Stop Adjustment (Patented) Both Directions 5° Overtravel 12°Adjustment Each End

The SuperNova Series actuators have unique, patented travel stop adjustments in both clockwise and counterclockwise directions. The 10° total overtravel provides adjustments from -5° to +7° at the "0°" Counterclockwise position and from +83° to + 95° at the "90°" Clockwise position.

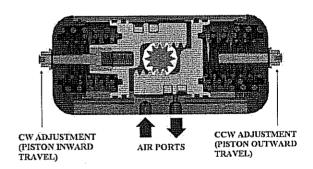
All actuated valves require accurate travel-stop adjustments at both ends of the stroke to obtain optimum performance and valve seat life. The accumulation of tolerances in the adaption of the actuators to valves is such that there must be a range of adjustment for both ends of the stroke to achieve the expected performance.

Ball and Plug Valves require precise adjustment at the open (CCW) position to protect the seat from the flow media and the closed (CW) position to assure absolute shut-off

Butterfly Valves require precise adjustment at the closed position to assure full shut-off, to prevent disc overtravel and damage to the seat at the closed position.

Tandem Valves, where two valves are operated in tandem through a single solenoid valve (eg. A 3-Way configuration), absolutely require precise adjustment at both ends of the stroke to assure the seating of both valves.

Sop adjustment and Locations



#### **Adjustment Bolt Location**

Fail position	Clockwise (CW) closed	Counterclockwise (CCW) open
	Left End Cap	Right End Cap
CW	Left End Cap	Right End Cap
CCW*	Right End Cap	Left End Cap
	position CW	position closed  Left End Cap  CW Left End Cap

\*The pistons are rotated 180° for CCW fail position

Flowserve SpA Via Prealpi n. 30 20032 Cormano (Milano) Italy Cap.Soc 55.049.414 € int. vers.

Reg. Imp. Milano 336904 - r.e.a. 1423580

Part I V A 10979380150

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#### SuperNova Series S050 ÷S200

Rack & Pinion AUTOMAX Actuators
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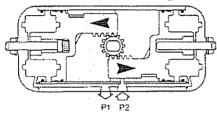
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#### **OPERATION**

(As viewed from top of the actuator)

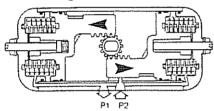
#### **Double Acting**

Applying air pressure to Port 2 drives the pistons outward, which turns the pinion counterclockwise as the air volume on the outside of the pistons exhausts through Port 1.



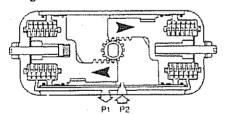
#### Spring return (Fail CW)

Applying air pressure to Port 2 drives the pistons outward, which compresses the springs and turns the pinion counterclockwise as the air volume on the outside of the pistons exhausts through Port 1.



#### Spring Return (Fail CCW)

Applying air pressure to Port 2 drives the pistons outward, which compresses the springs and turns the pinion clockwise as the air volume on the outside of the pistons exhausts through Port 1.

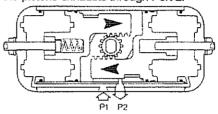


#### Changing direction of pinion rotation (CW to CCW)

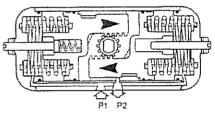
The SuperNova series actuators are normally assembled as Double Acting or Spring Return Fail CW (spring action turns pinion clockwise).

To assembly the actuator on Spring Return Fail CCW (spring action turns pinion counterclockwise):

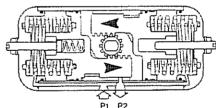
 Follow disassembly procedures (next page) from point #1 through #8. Applying air pressure to Port 1 drives the pistons inward, which turns the pinion clockwise as the air volume on the inside of the pistons exhausts through Port 2.



Exhausting the air pressure from Port 2 allows stored energy of the springs to drive pistons inward, turning the pinion clockwise. Air volume on outside of pistons vents through Port 1.



Exhausting the air pressure from port P2 allows stored energy of the spring to drive pistons inward, turning the pinion counterclockwise. Air volume on outside of pistons vents through Port 1.



- Rotate both pistons 180° around their axis: left piston rack must be on air supply ports side, right pinion on the opposite side (see Spring Return CCW drawing).
- 3. Follow reassembly procedures.

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#### SuperNova Series S050 ÷S200

Rack & Pinion AUTOMAX Actuators Pag. 3/4

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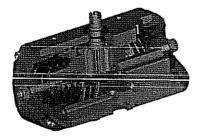
#### **MAINTENANCE INSTRUCTIONS** Disassembly Procedures

- Disconnect all air and electrical supplies from actuator.
- Remove all accessories from actuator and dismount actuator from valve.
- Position actuator with air supply ports facing you. Apply air pressure to Port 2 to release spring pressure from the Stop Bolt (9).
- Remove the Stop Bolt Retaining Nut (14), Washer (15), and O-ring (16) on the left Endcap (19) and turn the Stop Bolt (9) clockwise into the Body (1) until it is flush with the Endcap (19).
- Exhaust air from Port 2, the Stop Bolt (9) should now turn freely. Continue turning Stop Bolt (9) clockwise until it is disengaged from the Endcap. S Spring Return Actuator:

CAÚTION: Follow step 4 to relieve force on inward travel stop before proceeding.

To remove S Endcaps, first completely remove two diagonal Endcap Screws (21) from one Endcap. The two remaining Encap Screws should be removed evenly. As the screws are removed, the springs will push the Endcap out. Repeat for opposite side. The springs well be totally unloaded before the screws are completely unthreaded.

Remove the springs (23, 24, 25).



#### Spring return version

D Double Acting Actuator: Remove the 8 Endcap Screws (21). Step 7 will push the Endcaps (18, 19) from the Body (1).

- Rotate Pinion (3) counterclockwise (D & S-FCW) or clockwise (D & S-FCCW) to drive the Pistons (2) off the end of the rack. Pull the Left Piston (2) from the body (1) by pulling on the Stop Bolt (9).
- Remove the Right Piston (2a) by pushing out through inside of Body (1).
- Remove the Snap Ring (5) Steel Pinion Washer (4a) and Pinion Washer (4).
- Tap Pinion (3) lightly with plastic mallet to remove.
- 11. Remove seals from pinion, endcaps, and piston. If necessary, remove seal from top pinion bearing.
- Top pinion bearing (26) is a light press fit into the housing. To remove, press out towards the bottom of the actuator body. Take care not to damage any of the surfaces. Bottom pinion bearing (27) is split. To remove, find split in bearing and spread apart just enough to fit over bottom pinion.

#### Reassembly Procedures

- inspect all parts for wear and replace any worn parts as needed. Replace all O-rings.
- Clean all components and lightly grease cylinder bore, pinion and seals with a multi-purpose "polymer" fortified grease such as DuBois Chemicals MPG-2.
- Reverse the disassembly procedures to reassemble.

  If top pinion bearing (26) was removed, it must be pressed back into place. The top edge of the bearing must be even with the top of the body. Insert top pinion bearing seal (28) into place, pressing down with a blunt screwdriver or similar tool, taking acre not to damage the seals.
- The standard Pinion (3) orientation is with the top accessory drive slot at 90° to the Body (1) in the 0°
- When fitting the Pistons (2 and 2a) ensure the teeth engage the Pinion (3) at the same time by measuring in from each end. Note: the orientation of the pistons will determine the operation of the actuator. Refer to the diagrams under "Operation" for correct piston position.
- Test the actuator for smooth operation and air leakage at service pressure before reinstalling.

#### Changing Number of Springs

- Follow the Disassembly Procedures through step 6
- Determine nested spring combination of inner, middle and outer spring. Consult catalog torque charts. Insert appropriate spring according to the attached chart into cylinder. Springs must be properly seated against piston and endcap to assure that springs do not bind.
- Re-assemble the actuator.

#### Spring chart models 63-200

Spring	Sprir	Spring Combination 1				
Group	#1 Spring (inner)	#2 Spring (middle)	#3 Spring (outer)	Configuration (Air Supply)		
S04	-	2	-			
S05			d-120- <b>1</b> 0-00-1	3 har		
S06	_	-	2	Maria C. Duli Maria		
S07			2	4 har		
S08	2		2	5 har		
S09	1	1	2			
S10		2	2	5 5 har		
S11	1	2	2			
S12	2	2	2			

#### Spring chart model 50

Spring	Sprir	Spring Combination 1				
Group	#1 Spring (inner)	#2 Spring (middle)	#3 Spring (outer)	Configuration (Air Supply)		
S04	1	1	-			
S05		2	Company was company	3 har		
S06	2			4 bar		
S07		2		5 bar		
S08	2	2		5.5 bar		
S09	2	-	2			

Notes:

#1 Spring has one color code dot #2 Spring has two color code dots #3 Spring has three color code dots S050 has maximum of 2 springs per endcap

Flowserve SpA

Via Prealpi n. 30 20032 Cormano (Milano) italy

Cap.Soc 55.049.414 € int. vers. Reg. Imp. Milano 336904 - r.e.a. 1423580

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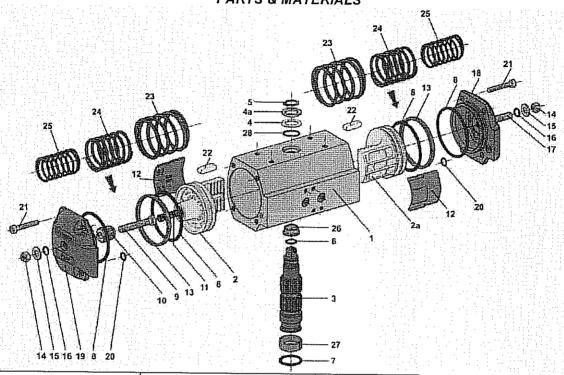


#### SuperNova Series \$050 ÷\$200

Rack & Pinion AUTOMAX Actuators

Pag. 4/4 B00043e4-rev1.doc

#### PARTS & MATERIALS



ITEM No.	DESCRIPTION	STANDARD MATERIAL	Quantity		
			D	S	
1	Body	Hard Anodized Aluminum	1	1 1	
2	Left Piston	Die Cast Aluminum	1	— <del>i</del>	
2a	Right Piston	Die Cast Aluminum	1	1 1	
3	Pinion	Nitride Coated Steel	1	1	
4*	Pinion Washer	Nylon	1	1 1	
4a*	Steel Pinion Washer	Stainless Steel	1	1	
5		Steel/Plated	1	1 1	
6*	Upper pinion O-ring	Nitrile Rubber	1	1 1	
:::::7*:::::::::::	Lower pinion O-ring	Nitrile Rubber	1	1	
87	Piston and end cap O-ring	Nitrile Rubber	4	4	
9	Inward travel stop bolt	Stainless Steel	1	1 1	
10	Inward travel retaining nut	Stainless Steel	1	1	
11	Inward travel spring	Steel/Plated	1	1	
12****	Piston guide	Nylon and Molybdenum Disulfide	2	2	
13*	Piston guide band	Nylon and Molybdenum Disulfide	2	2	
14	Stop bolt retaining nut	Stainless Steel	2	2	
15	Stop bolt washer	Stainless Steel	2	2	
16*	Stop bolt O-ring	Nitrile Rubber	2	2	
17	Stop bolt	Stainless Steel	1	1	
18	Right end cap	Die Cast Aluminum/Electrostatic Poly	1	1	
19	Left end cap	Die Cast Aluminum/Electrostatic Poly	1	<del>  i                                   </del>	
201	End cap supply O-ring	Nitrile Rubber	2	2	
21	End cap screw	Stainless Steel	8		
22	Anti ejection device (optional)	Nylon	2	2	
23	Outer spring	Spring Steel Coated	0	2 max	
24	Middle spring	Spring Steel Coated	0	2 max	
25	Inner spring	Spring Steel Coated	0	2 max	
26*	Top pinion bearing	Hard Anodized Aluminum	1	1	
27*****	Bottom pinion bearing	PEEK	1	1 1	
28****	Top bearing O-ring	Nitrile Rubber	i	1	

#### NOTES:

D= double acting actuators S= spring return actuators \* parts included in a Repair Kit

#### SEALS:

Standard - Nitrile: -30°C + +80°C (-20°F + +175°F)

H= High temp. - Viton: -30°C + +150°C (-22°F + +302°F)

L= Low temp. – Fluorositicon: -50°C + +80°C (-58°F + + 176°F)

PRESSURE RATING: 10 bar (150 psi) max

Flowserve SpA Via Prealpi n. 30 20032 Cormano (Milano) Cap.Soc 55.049.414 € int. vers. Reg. Imp. Milano 336904 - r.e.a. 1423580 Part. I.V.A 10979380150 Cod.Fisc. 03309300105 Tel. ++.39.2.663251 Fax ++.39.2.6151863 E-mail:italyfcd@flowserve.com http://www.flowserve.com

## W SERIES SWITCHBOX

## Watertight protection

IEC 529 IP66 / IP67

New W series switchbox is designed to be directly and easily mounted onto actuators having connections according to Namur VDE 3845, in order to reduce switchbox/actuator overall dimensions.

#### **Features**

### Quick-set cams

Tool free adjustment of switch trip is accomplished simply by pushing or pulling the cam and rotating it to the new position. Cams are spring-loaded and splined to maintain switch setting in any installed position.

#### · Limit switches

Multiple options available: electromechanical, amplified proximity, Namur proximity.

### Cable entries

Double hole std. (WDB). Triple hole optional (WDC).

### · Terminal strip

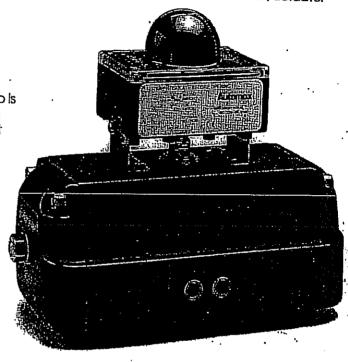
Pre-wired on printed circuit board. Extra terminal stilp included for optional solenold valve,

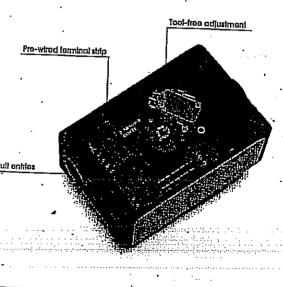
### Position indicator

Available with three different covers and position indicators: flat, Pharos<sup>™</sup> or metallic.

## Captive Cover Screws

permit calibration without potential for losing screws.





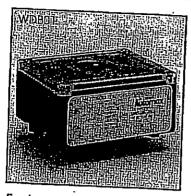




Actuators and Complete Valve Automation Systems

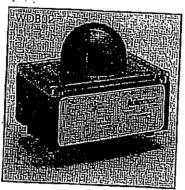
via Precipi, 30 - 20032 Comano (Milano) Italy tel. ++39.02.66.32.51 fax ++39.02.61.51.863 E-mail: Info@automax.it www.flowserve.com

## **ENCLOSURE OPTIONS**



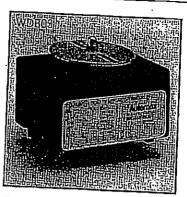
#### Features

- anodized aluminium body
- flat polycarbonate cover
   yellow double-arrow position Indicator



#### Features

- anodized aluminium body
- polycarbonate cover
- red and green MINIPHAROS position indicator



#### Features

- anodized aluminium body and cover
- aluminium disk position indicator

## SWITCH OPTIONS

## Electromechanical switches

		_	
Switch type	Switch characteristics	QJV	T
V5	SPDT max 10A 250VAC	<del>  -</del>	
		2	WDB**01201



## Namur proximity switches (intrinsically safe)

Swilch lype			_
- Indiana	Swiich characteristics	Q.ly	Box part number ("=01 02 03)
P+F NJ4-12GK-N	cylindrical proximity 2 wires not amplified Namur	1	WDB**06101
	EExia IIC certified	2	WDB**06201

	<u> </u>		1100 00201
Switch type .	Switch characteristics		
		. σ.lγ	Box boy unuper (=01 03,03)
P+F SJ-3,5-N	slot proximity 2 wires not amplified Namur	1	· WDB**21101 ·
	EExia IIC ceriffed	2	WDB**21201

			<u> </u>
Switch type	Switch characteristics	E ly	Box port number (**=01 02 03)
P+F NJ2-V3-N	V3 proximity 2 wires not amplified Namur	1	WDB**18101
	EExio IIC ceriffed	2	WD8**18201







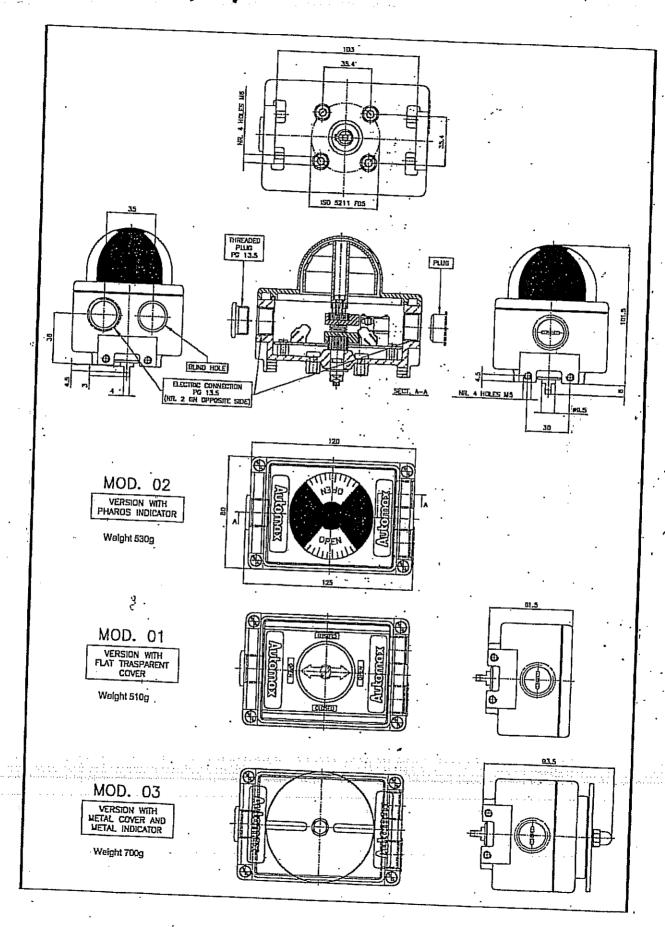
## Amplified proximity switches

	· · · · · · · · · · · · · · · · · · ·		
Switch type	Switch characteristics	lan	P
P+F NU4-12GM40-E	cylindrical proximity, 3 wires NPN n.o.	- Lily	Bear best unsuper (*=01 us us)
	Fahhi Aoluade 10-90 ADC	2	WDB**37201
P+F NJ4-12GM40-E2	cylindrical proximity 3 wires DND a -	<del> </del>	
	supply voltage 10-60 VDC	2	WDB**38201

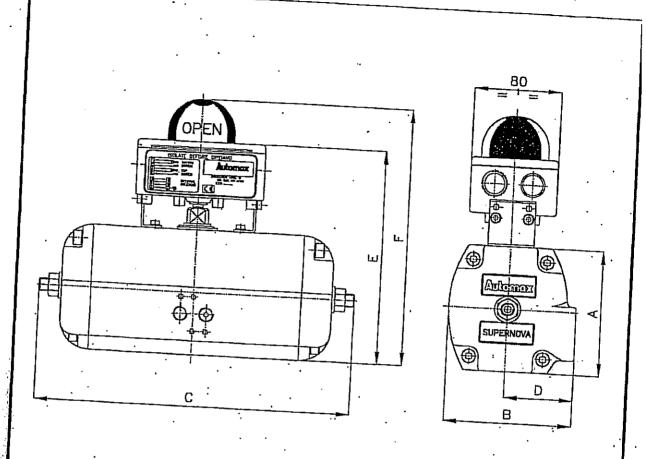


Other switch options are available on request

## DIMENSIONS (mm)

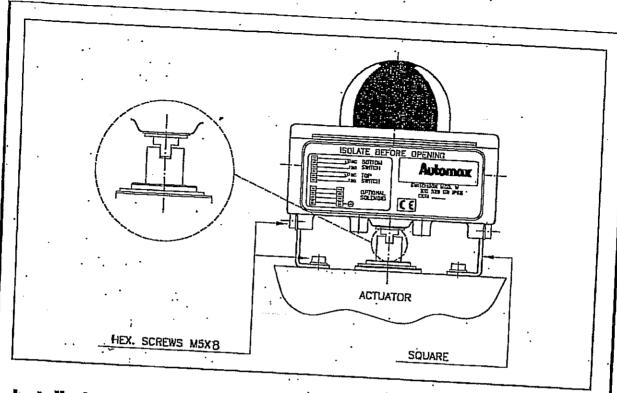


## OVERALL DIMENSIONS W SERIES SWITCHBOX / SUPERNOVA ACTUATOR (mm)



ACTUATOR	. A	В	C	D	. E	F	Mounting Kit*
S050	65	69	170.	40	148	100	PN
5063 ·	78	80,5	202	45	<del></del>	188	-
<u>.</u> 5085 .	700	104.5		57	161	201	
S100	116	118	296	63	183	223	1 .
\$115	131	136.5	342	74	199	239	KL 01
<u> </u>	142	146	402	78	224	264	Welght 50g
si50	168	169	486	88	235	275	
\$175	200	201	542	106	261	301	
\$200	230	228	620	120	293	333	
\$250	280	305	654	165	323	363	
\$300	340	365	788	195	393	433	KL 02
· · · ·	<del></del>			170	453	493	Weight 70g

# INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS



### Installation

W series switchbox is mounted onto the actuator using 2 squares fixed each one to the box with 2 M5x8 hexagonal head screws and connected to the actuator with 2 M5x8 hexagonal

During assembly pay attention that tongue fit perfectly the pinion slot.

## Wiring instructions

Remove the cover after unscrewing the 4 screws.

Remove the plugs from the cable entitles and substitute them with adequate cable glands to

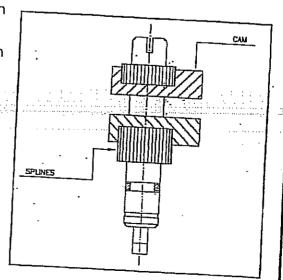
A wiring diagram is printed on the nameplate. Follow it carefully for the right connection to your system. Size the cables according to the application and be sure to ground at ground terminal provided. Solenoids may also be wired through the switch enclosure.

## Adjusting limit switches

Make the actuator/valve system rotate CW, then adjust as follows:

- 1. Pull the BOTTOM cam to disengage It from splines, then rotate it CW just until switch trips. Reengage the cam with splines.
- 2. Make the actuator/valve system rotate CCW.
- 3. Push the TOP cam to disengage it from splines, then rotate it CCW just until switch trips. Reengage the cam with splines.

WARNING: disconnect power before removing cover





#### Istruzioni per la messa in funzione e la manutenzione degli ELETTRODISTRIBUTORE SERIE 551 (corpo in alluminio) con plano di posa NAMUR

3/2 o 5/2

IT

#### DESCRIZIONE

Elettrodistributore a cassetto 3/2 o 5/2, serie 551, corpo in aliuminio trattato con plano di posa secondo le raccomandazioni NAMUR per il montaggio diretto sull'attuatore prieumatico a semplice effetto (funzione 3/2 NC) o doppio elletto (funzione 5/2). Lo stesso elettrodistributore si adatta, alle due funzioni inserendo sulla perte interiore una delle due plastre interfaccia 3/2 NC o 5/2

Gil elettrodistributori 551 NAMLIR possono essere dotati di leste magnetiche stagne IP65 o certificate per atmosfero pencolose EExid, mi, em, la cia bassa

CONSUMO elettrico

Tutte le connessioni di scanco sono canalizzato, assicurano un otama prolezione verso l'ambiente e sono raccomandate per installazioni in zone critiche come sale bianche, industrie tarriaceutiche o agro-alimentari

E' necessario canalizzare o equipaggiare pli scanchi per proteggere i compo-nenti interni del distributore e dell'attualore pneumatico in caso di utilizzo esterno e la ambiente critico (poveri, liquidi o altri agenti). La curriere degli attuatori a semplice effetto (lato molle) sono completamente.

isolate dall'almosfera attraverso il distributore.

Versioni disponibili (fig. 1)

- Distributore monostabile : comando elettrico, ritorno a molia.
- · Distribulore bistablie : comando e ritomo elettropheumatica

#### MONTAGGIO

Questi elettrodistributori sono studiati per i campi di funzionamento indicati sulla targhetta. Ountaiasi modifica sul materiale riecessita del proventivo consenso da pane del labbricante o del suo rappresentante

Questi elettrodistributori sono stati studini per il funcionamento su aria o gas neutri filirati. Non superare la pressione massima ammessa. « 10 bar La messa in lunzione e la manutenzione di questi prodotti vanno effettiale da personale specializzato.

Questi elettrodistributori possono essere montati in qualsiasi posizione: Perte versioni con piloti 192 (NK, PV, EK) e 195 (SSC), rispettare la posizione di montaggio dei piloti indicata sulle ligure 5 e 6.

Prima di montare il distributore sull'attuatore, adattare il componente dia funzione scella

- Selezionere la piastra interlaccia sulla funzione desiderata 3/2 NC o 5/2 (fig. 3, ril. ta o 1b)
- Verificare la presenza e l'inserimento corretto della guamizione sagomata (fig. 3, rif.7)
- Assemblare piastra e distributore con le 2 vili (lig. 3, nt.6) formae, respenando il sonso di montaggio: il informento della funzione deve essere posizionato lato ritorno (spina di riterimento)

Montare le due guarnizioni OR (lig. 3, rif.9)

- Posizionare, se necessano, la spina di rifermento sull'attuatore Sulla piastra 3/2, la spina di rifermento Ø 5 è situata in A1 (lig. 3)
  - Sulla plastra 5/2, la spina di rilenmento 0 5 è situata in A2 (fig. 3)
- I distributor si possono montare in qualsiasi posizione.

#### CONNESSIONE PNEUMATICA

Connessione dell'elettrodistributore (fig. 3)

Raccordare le tubazioni in tunzione dei nierimenti indicati sulla targhetta. Funzione 3/2 NC: Arrivo della pressione tramite il raccordo 1, filettato 1/4. Scanco tramite il raccordo 3 (1/8). La scanco dalla camere delle molle di ritorno dell'attuatore a semplice effetto è canalizzato attraverso il distributore verso la connessione 3 raccordebile. Si raccomanda di non tappare

la connessione 5 (se non utilizzala). - Funzione 5/2: Arrivo della pressione 1, filettato 1/4. Gii scanchi dell'attuatore sono canalizzati attraverso il distributore verso le connessioni

3 e 5 raccordabili 1/8

Connessione del regolatori di scanco

A richiesta, gli elettrodistributori sono forniti senza o con riduttori di scerico miniaturizzali 1/8 (fig. 2).

Questi miniregolatori di scarico regolabili consentono di regolare la velocità di manovra dell'allustore e sono anche raccordabili (filettablica 1/8) per la canalizzazione degli scarchi.

Montaggio / Regolazione (fig. 3) . Versione 3/2 NC = 1 regolatore da montare sulla connessione 3 Versione 5/2 = 2 regolatori da montare sullo connessioni 3 e 5 Serrare nella connessione la vite (3) del nouttore fino all'arresto, poi svilare per alimentare la portata dello scarico senza mai superare 2 giri (portata max ottenuta a partire da 1 giro),

Bioccare il controdado (4) con una chiave fissa da 13 mm.

La regolazione deve essere effettuata fuori pressione e va affinata al momento delle prove sotto pressione.

Connessione degli scarichi del pilota

Possibilità di raccogliere gli scarichi della versione con pilota integrate (fig. 3): Tagliere il cappuccio di plastica di protezione (6)

funzionamento senza lensione. Raccommandazioni generali per il raccordo pneumatico Collegare le tubazioni secondo le funzioni desiderate tenendo conto dei

Il comando manuale, indicato con Il simbolo (is ) fig 4 ÷ 6, permette il

nferment di raccordo indicati sui prodotto è in questa documentazione. Assicurarsi che nat circuito non entrino corpi estranali. Sostenere è alineare corretamento le tubezioni per eviture sollacitazioni maccaniche sul distributore. Evitare di usere l'attrezzo di serraggio come leva. Posizionere le chiavi di serraggio il più possibile vicino al punto di raccordo. Per evitare il rischio di danni, NON STRINGERE TROPPO I

#### RACCORDO ELETTRICO

Elettrovalvole pilota / teste magnetiche

raccord delle tubazioni

Versione stagna IP65, pilota Integrato (fig. 3) : montare la dobina sul cannotto (crientabile e 360°), poi il connettore disinnestabile CM8 (Pg 9P), orientable a 180° (3 momenti : 2 + massa).

Raccomandazioni generali per il raccordo elattrico

Collegare la connessione di scanco GM5 (5).

Il raccordo elettrico deve essere eseguito da personale qualificato e secondo le nomie a l'regolamenti vigenti. Attenzione

Prima di qualciasi intervento, staccare la cornante elettrica per togliere tensione al componenti.

 A saconda della tansione, il componenti elettrici devono essere messi a terra in conformità alle norme e al regolamenti locali.

La maggior pana degli elettrodistributori prevade bobina per la imassa al tensione permanente. Per evitare brudature, non toccare la testa magnetica che, in lunzionamento normale e sotto tonsione, può raggiungore temperature elevate. Nei caso in cui l'elettrovalvota sia facilmente accescipile, finatellatore deve prevedere una protezione della tosta magnetica.

#### MANUTENZIONE

Prima di qualsiasi intervento di manutenzione o di rimessa in funzione, staccare la corrente dall'elettrodistributore, depressurtzzare e pullre, per evitare il rischio di denni alla persona e al materiale.

#### · Pulizia

La manutenzione degli elettrodistributori varia a seconda delle loro, condizioni di utilizzo. Sa necessario procedere ad una pullzia periodica. Ai momento dell'intervento, i componenti devono essere esaminati al fine di filevare un'eventuale eccessiva usura. E' necessario procedere alla pulizia nel caso in cui si osservi un rallentamento della velocità quando la pressione di pilotaggio è cometta o si verifichi un rumore anomalo.

Rumore di funzionamento

L'utilizzatore potra stabilire con precisione il livello di rumorosità soltanto dopo avermentato il componente sull'implanto. Il rumore di funzionamento varia a seconda dell'utilizzo, dei fluido e del tipo di materiale.

Manutenzione preventiva

- Far funzionare l'elettrodistributore almeno una volta al mesa per verificarne l'apenura e la chiusura.

- fri caso di problemi durante il montaggio o la manutenzione o in caso di on caso ur processin coronics in in conoggio o la managementanti ufficiali.

Consigli per la riparazione

- Pressione di uscha non cometta i Verificare la pressione all'entrata dell'elettrodistributore; deve confepondere ai valori ammessi indicati sulla tarphetta di identificazione

Attenzione, rispettare i valori minimi di pressione di pilotaggio : 2 bar Per evitare il rischio di danni ella persona o al materiale, prima di rimettere in funzione l'eletrodistributore, venticama il corretto funzionamento.

• Ricambi

Sono dispunibili bobine di ricambio. Se necessario, effettuare la completa sostiluzione dell'elattrodistributore.

In conformità alla direttiva CEE 89/392/CEE Allegato II B, su richiesta potra essere fornita una Dichiarazione di Incorporazione. Vi preghlamo di indicarci il numero della conferma d'ordine (AR) e i riferimenti o i codici dei relativi prodotti.

Questo prodotto e conforme al requisiti essenziali stabiliti dalla Direttiva 69/336/CEE sulla Compatibilità Elettromagnetica e successive modifiche nonché alle direttive Bassa Tensione 73/23/CEE + 93/68/CEE. Su semplice richiesta potrà essere fornita una dichiarazione di conformità.



#### Installation and maintenance instructions SERIES 551 SPOOL VALVES (aluminium body) with NAMUR interface

3/2 or 5/2

GB

#### DESCRIPTION

The Series 551 3/2 NC or 5/2 spool type valves have a specially-freated aluminium body with a mounting surface as per NAMUR recommendations for direct installation of a single-acting (3/2 NC function) or double-acting spool (5/2 function). The same type of solenoid valve can accompdate both types of operator by internally installing the 3/2 NC or 5/2 interface plates supplied

Series 551 NAMUR spool valves can be equipped with soleroids to IP65. solenoids certified for potentially exposive atmospheres (EEx d, m, em, ia) or solenoids of the low electrical power consumption type.

All the exhaust ports of this speel valve are pipable, providing better environmental protection, particularly recommended for sensitive areas such as white rooms, and applications in the pharmaceutical and food processing

It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the speel valve and its pneumatic operator if used outside or in haish environments (dust, liquids etc.)

The return-spring chambers of the single-acting operators "breath" through the spool valve, isolating them from the outside atmosphere versions available

- Monostable valves: electric-operated, spring return.
- · Bistable valves: sciencid-air operated and return

#### INSTALLATION

Valves are designed to be operated within the technical characteristics specified on the nameptate. Modifications to the products may only be made after consulting the manufacturer or his representative.

These valves are designed to operate with filtered neutral gas or air. Do not exceed the maximum allowable pressure of the valve = 10 bar. Installation and maintenance of the valve must be carried out by qualified personnel only.

For the versions with pilots 192 (NK, PV, EK) and 195 (ISSC), follow the pilot mounting position as shown in figures 5 and 6.

Before mounting the spool valve on the operator, it must be set to the required

- Select the interface which corresponds to the required function : 3/2 NC or 5/2 (fig. 3, 1a or 1b).
- Make sure the seal is properly fitted (fig. 3, rep.7)
   Assemble the interface under the spool valve with the 2 screws supplied (fig. 3, rep.8). Make sure the indication of the function is placed on the return side (polarizing slot)
- Fil the two O-rings (fig. 3, rep.s).
- If necessary, fit the down pin on the operator.
- . On the 3/2 NC function plate: the Ø.5 dla, hole is at A1 (fig. 3).
- On the 5/2 function plate: the Ø 5 dla. hole is at A2 (fig. 3).

These valves can be installed in any position.

#### PNEUMATIC CONNECTION

Connection of the spool valve (fig. 3)

Connect pipes in accordance with the indications on the nameplate.

- 3/2 NC function, Pressure at Port 1, 1/4", Exhaust Port 3, 1/8", Exhaust from the return operator spring chambers in the single-acting version is channelled through the valve to Port 3 1/8". It is recommended to protect Port 5 (if not used), don't stop up it.
- 5/2 function: Pressure at 1, 1/4". The operator exhausts are channelled through the valve to connectable ports 3 and 5, 1/8".

Connection of exhaust reducers

Valves may be supplied with 1/8° miniature exhaust reducers as ordered. These adjustable exhaust mini-reducers can be used to vary the operating speed of the spool. These are also connectable (1/8\*) for collecting the

exhausts air (fig. 2).
Installation / Adjustment (fig. 3):
3/2 NC version = 1 reducer fitted to Port 3
5/2 version = 2 reducers, fitted to Port 3
5/2 version = 2 reducers, fitted to Ports 3 and 5
Engage the screw (3) in the opening in the reducer until it steeps at the bottom, then unscrew it to increase the exhaust flow (never more than two turns, maximum flow obtained at one turn).

Tighten the locknut (4) with a 13 mm wrench.

Make rough adjustment before pressurising and correct after pressuris-

Connection of pilot exhausts

It may be possible to corriect the exhausts of the integral pilot version (fig. 3):

Remove the plastic protective cover (6)

Connect the M5 exhaust port (5).

The manual operator, indicated by the symbol ( n ) in fig. 4 to 6, allow operation of the valve when unenergised

General recommendations concerning pneumatic connection Connect pipes for required functions in accordance with this documentation and the port markings on the valve.

Make sure that no foreign matter enters the system.

Correctly support and align the pipes to avoid subjecting the valve to mechanical stress. When lightening, avoid using the valve as a lever, Use proper tools and locale wrenches as close as possible to the connection point. To avoid damage of the equipment, DO NOT OVERTIGHTEN pipe connections.

#### ELECTRICAL CONNECTION

Solonold-air pilot valves / solonoids

IP65 sealed version with integral pilot (fig. 3): Fit the coll on the tube (rotatable through 360°), then CM8 spade terminal connector (Pg 9P), rotatable by 180° increments (3 pin: 2 + earth).

General recommendation for electrical connection Electrical connections are only to be made by trained personnel and in accordance with the applicable regulations or standards.

- Before work, switch off the electrical power supply to de-energise all
- Depending upon the voltage, electrical components must be provided with an earth cornection and satisfy local regulations of standards. Most valves are equipped with coils designed for continuous duty service. To avoid any possibility of damage or injury, do not louch the solenoid, which can become het under normal operating conditions, if the solenoid valve is easily accessible, the installer must provide protection against accidental contact.

#### MAINTENANCE

Prior to any maintenance work or putting into operation, cut-off the supply to the pilot, depressurise the valve and vent it in order to prevent injury or damage.

Cleaning

Maintenance of the valves depends on the operating conditions. They shall be cleaned at regular intervals. During servicing, the components must be checked for excessive wear. The valves must be checked when a slowing down of the cycle is noticed although the pilot pressure is correct or if any unusual noise or a leak is detected.

Sound emission

The emission of sound depends on the application, medium and nature of the equipment used. The exact determination of the sound level can only be carried out by the user having the valve installed in his system. · Preventive maintenance

Operate the valve at least once a month to check function.

Should any difficulties or questions arise during installation and maintenance, please contact ASCO/JOUCOMATIC or their authorised representatives

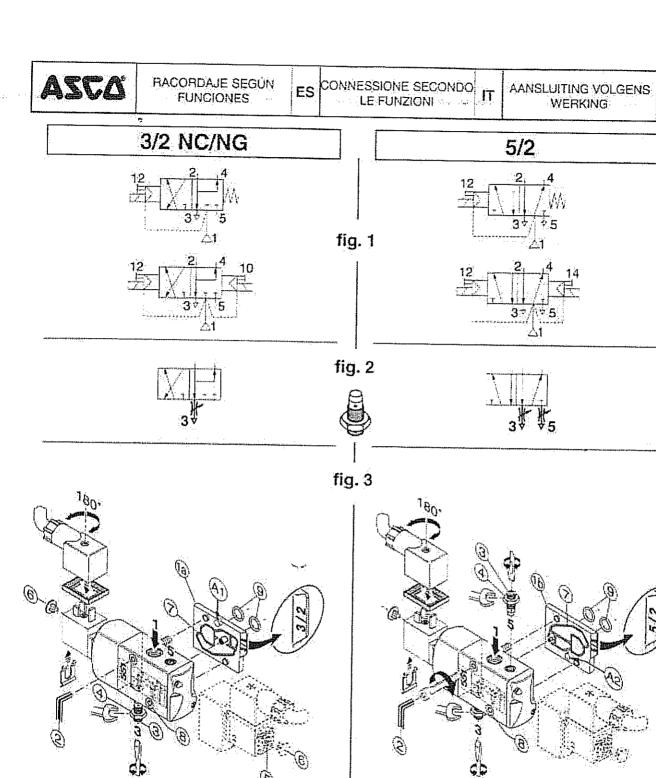
Troubleshooting

- Wrong exhaust pressure: Check the pressure on the supply side of the valve, it must correspond to the values indicated on the nameplate. Caution, observe the minimum pilot pressure values: 2 bar To avoid any risk of damage or injury, check that the valve operates correctly before putting it back into service.

Spare parts

Colls are available as spare parts. If necessary, change the entire valve

A separate Declaration of Incorporation relating to EEC directive 89/392/EEC Annexe II B is available on request. Please provide ocknowledgement number and serial number of products concerned. This product complies with the essential requirements of the EMC-Directive 89/336/EEC, and amendments as well as the 73/23/EEC + 93/68/EEC Low Voltage Directives. A separate Declaration of Conformity is available on request.



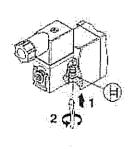


fig. 4

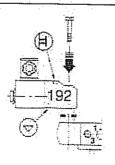


fig. 5

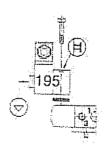
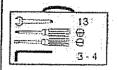


fig. 6





NL