Equipment List

Verkooporder **Prod.dossier** **Prod.ordernr.** **Artikel**
R2-040241 **PD2-040395** **PO2-040428** **15105-006 - gas fired WWB vap - 16 kNm3/hr**

Nr.	Qty	Regel nr.	Instrument tag CN4518-2	Description	Size	Material	Certificate	Serial nr	Manufacturer	Purchase order	Regel nr.
1	1	650	008	Pneum. cryogenic globe valve	DN80 PN40	316	425571	570812	Herose	4041335	1
2	1	10	002.1 / .2 / .3	Burner installation			See tab 8		Eclipse	4041161	1
3	3	1110	004.1 / .2 / .3	Mixer Type: Model 30 DTD-1,5					Chemineer	4041373	1
4	2	730	012 \ 021	Ballvalve 7742	1" BSP	316(L)			Econosto	4041375	1
5	2	1020	009.1 / 009.2	Ballvalve 7383	DN50 PN40	316(L)			Econosto	4041375	2
6	1	1030	010	Float valve fig 730 rvs	1" BSP	Rvs			Econosto	4041375	3
7	1	1060	022	Needle valve Fig. 226S	1/2" BSP	316			Econosto	4041375	4
8	2	1070	019.1 /.2	Manometer glyce. Fig. 3660xØ63	1/4" 0-40BAR	rvs/ms			Econosto	4041375	5
9	1	1100	020	Pressure Control valve Fig 142 max.40 ba	3/8"BSP	Messing			Econosto	4041375	7
10	3	1230	015.1 / .2/ .3	Thermometer fig.661 0-120Gr.C	63mm 1/2" G L=250	Alu mess			Econosto	4041528	2
11	1	1250	011	Solenoid valve Econ fig32200 model 2	1" BSP	Brass			Econosto	4041552	1
12	1	1260	018	Solenoid valve Econ fig33020	1/4" BSP	Brass			Econosto	4041552	2
13	2		013.3 / 017.1	PT100 L=300mm, incl. StSt Pocket	½" BSP	StSt			Voorwerk	4041563	1

HEROSE

KONFORMITÄTSERKLÄRUNG DES HERSTELLERS ÜBER KONSTRUKTION, FERTIGUNG UND PRÜFUNG VON VENTILEN
DECLARATION OF CONFORMITY OF THE MANUFACTURER FOR DESIGN, MANUFACTURE AND TESTING OF VALVES

Konform.-Nr.:
Conformity No.: 1873

Hersteller
Manufacturer
HEROSE GMBH
ARMATUREN UND METALLE
Elly-Heuss-Knapp-Str. 12
D-23843 Bad Oldesloe

HEROSE-Kom-Nr. 425571
HEROSE-Ref-No.

Besteller
Customer Tekoma BV / Koperweg 3 / 2401LH Alphen A/D Rijn

Wir erklären, dass die von uns in Verkehr gebrachten Erzeugnisse
We declare that the supplied product(s)

Produktart Product	**Flanschen – Durchgang – Ventil**	Typ Type	**03343.0800.1022**
Größe Size	**DN 80**	Menge Quantity	**1**
Laufende Nr. Serial No.	**570812**	Baujahr Manufact. Date	**12.04**
max. Betriebsdruck PN max. Working press. PN	**40 bar**	Betriebstemperatur Working temperature	**-196°C bis +120°C**

hinsichtlich Konzipierung und Bau den grundlegenden Sicherheits- und Gesundheitsanforderungen der / den nachstehend aufgeführten Richtlinie(n) / Regeln entspricht:
fulfill the fundemental health and safety requirements of the below mentioned directive(s) / standard(s) concerning design and construction:

Richtlinie 97/23/EG Druckgeräterichtlinie, Kategorie II / Directive of the Council 97/23/EG, Category II

Verwendetes Konformitätsbewertungsmodul D1 / Used Conformity Evaluation Module D1

Verantwortliche Prüfstelle Responsible Authority	Name / Name Adresse / Address	TÜV Nord e.V. Große Bahnstraße 31 22525 Hamburg
	Identifikationsnummer Identification number	**CE 0045**
für Qualitätssicherung Produktion - Modul D1 for Quality Control Production - Module D1	Zertifikat-Nr. / Certific. No. Datum / Date	**07 202 0111 Z 0003/0/001** **01.12.2001**

Es werden folgende technische Normen und Spezifikationen angewendet:
The following technical rules ans specifications are used:
TRG 253

Stempel der Herstellerfirma:
Stamp of the Manufacturer:

Geschäftsleitung / Management

i.A. / p.p. .....
Qualitätskontrolle / Quality Control

Bad Oldesloe, Dezember 13, 2004

Anmerkungen / Remarks

Etwaige Änderungen an dem oben beschriebenen Erzeugnis lassen die Gültigkeit dieser Erklärung erlöschen.
The validation of this declaration expire in the case of any modifications at the above mentioned product.

Werkszeugnis / Test report EN 10204 – 2.2

Abnahmeprüfzeugnis / Inspection certificate ☒ EN 10204 – 3.1B

HEROSE

Auftraggeber / Customer TEKOMA BV / KOPERWEG 3 / 2401LH ALPHEN A/D RIJN

Bestell-Nr. / Order-No. 4041335 **Datum / Date** 12.10.04 **HEROSE-Kom-Nr. / HEROSE-Ref-No.** 425571

Nr. No.	Pos. Item	Stückz. Quantity	Armaturentyp Valve type	DN mm	PN bar
2328	10	1	DN80 (3") Actuated Ext. stainless steel Globe Valve, PN40 fire save Gland Packing with actuater 27501.31A6.6GPO Delta P: 2,0 Bar Art.-No.: 03343.0800.1022	80	40

Material

Gehäuse Body	1.4308	Certificate EN10204-Bescheinigung	3.1B	Chargen-Nr. Batch-No.	TD040337	von from	Fujian
Kopfstück Upper part	1.4301	Certificate EN10204-Bescheinigung	3.1B	Chargen-Nr. Batch-No.	1334	von from	Sandvik

Gehäuse Kennzeichnung Body marking	1.4308 T DN80 PN40 Ventil-Nr.:570812	Ch.-No:: TD040337 O2 -196°C - + 120°C

Anforderungen nach / Requirements according to DIN EN 12266-1 / DIN EN 12266-2

Prüf-Nr.	Beschreibung	Bemerkung	
P10	Festigkeit des Gehäuses mit Wasser 1,5 x PN Body strength test with water 1,5 x PN		☒
P11	Dichtheit des Gehäuses mit Luft 6 bar Body leakage test with air 6 bar	Prüfung mit 40 bar Test with 40 bar	☒
P12	Sitzdichtheit mit Luft 6 bar Seat leakage test with air 6 bar	Mit 40 bar Leckrate A	☒
P20	Festigkeit Abschlusskörper Obturator strength test		
F20	Funktionsfähigkeit Functional test		☒
	öl- und fettfrei für Sauerstoff / cleaned for oxygen service entspr. / in acc. EN 12300 - O2		☒

Ergebnis der Prüfungen / Results of the inspections

Die mit x gekennzeichneten Prüfungen nach DIN EN 12266 wurden an jeder Armatur durchgeführt. Es wurden keine Mängel festgestellt.
The inspections marked with x were carried out on each valve according to DIN EN 12266. No faults were observed.

Anlagen / Enclosures : 2

Bad Oldesloe , 13.12.04 Inspector / Werkssachverständiger .....

HEROSE GMBH
ARMATUREN UND METALLE
Elly-Heuss-Knapp-Str.12
D-23843 Bad Oldesloe
Tel. (+49) 4531/509-0
Fax (+49) 4531/509-120

Abnahmeprüfzeugnis (EN10204-3.1B)
Inspection Certificate (EN10204-3.1B)
检验证明（EN10204-3.1B）

Zertifiziert nach Druckgeräte-Richtlinie 97/23/CE, Anhang1, Abschnitt 4.3 durch TÜV Anlagetechnik GmbH(Benannte Stelle Kenn-Nr.0035)

Certified in accordance to Pressure Equipment Directive 97/23/CE, Annex, Paragraph 4.3 by TÜV Anlagetechnik GmbH (Notified Body Identification No. 0035)
德国莱茵公司根据压力容器 97/23/EC，
附录 1.第 4.3 章的要求进行论证

Prüf-Nr. / Certificate No/证明号.20040230	Besteller / Customer/客户 ： D.F.D
Prüfgegenstand / Article/品名:	Gussteil/ Casting/铸件
Prüfgrundlage / Specification/生产技术规范:	AD-Merkblatt W5
Werkstoff / Material/材质: 1.4308	entsprechend/according to/生产依据: EN 10213-4:1995
Erschmelzungsart/ Melting process: 冶炼方法	E/电炉冶炼
Wärmebehandlung / Heat treatment 热处理:	1080℃/2h, AT QW/Lösungsgeglüht und in Wasser abgeschreckt 1080℃/2h, AT QW/ Solution annealing and quenched by water 1080℃/2 小时，水淬/固溶退火和水淬
enmweite/Nominal Size/公称尺寸:	Nenndruck/Nominal Pressure/标称压力
Herstellerzeichen / MarkofManufacture 厂家标志:	TD
Stempel des Werksachverständigen/ Stamp of Work inspector/检验员盖章:	L1 L2 L3

Umfang der Lieferung / Content of delivery/运输内容

Pos.-Nr. Item No. 零件号	Stückzaht Quantity 数量	Gewicht Weight 重量	Gegenstand/Article/品名	DN	PN	Schmelze Nr. Heat No. 炉次	Probe-Nr. Specimen No. 试样号
5505000490785	20					TD040334	C-04041406
5501000910785	10					TD040335	B-04031012
	6					TD040336	B-04031013
	1					TD0308110	B-04031014
5501000990785	5					TD040337	C-04041406
5500900850785	4					TD040303	A-04021704
	5					TD040305	A-04021705

gebnis	Die gestellten Anforderung sind laut Anlage1 erfüllt.
Result	The requirements are fulfilled, as listed in Annex 1.
结果	满足附录 1 中所列的要求。

Anlage 1/ Annex 1/附录 1: Ergebnis der Prüfungen/ Test Results/测试结果
N) Chemische Analyse/ chemical analysis/化学分析

Schmelze Nr. Heat No. /炉次	C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni%	Cu%
TD040334	0.048	0.536	0.814	0.0122	0.0042	18.09	0.067	8.69	0.179
TD040335	0.051	0.401	0.715	0.0264	0.0024	18.20	0.120	8.77	0.168
TD040336	0.052	0.415	0.788	0.0068	0.0026	18.14	0.101	8.67	0.088
TD0308110	0.048	0.404	0.843	0.0161	0.0045	18.21	0.099	8.57	0.058
TD040337	0.048	0.536	0.814	0.0122	0.0042	18.09	0.067	8.69	0.179
TD040303	0.064	0.451	0.872	0.0268	0.0063	18.46	0.132	8.54	0.236
TD040305	0.061	0.435	0.872	0.0222	0.0063	18.30	0.131	8.69	0.288

B) Mechanische Prüfungen/Mechanical test/机械性能试验

Probe Nr Specimen No. 试样号	Prüftemp Test temp 试温 ℃	Rp0.2% Proof stress 试验应力 N/mm²	Rp1.0% Proof stress 试验应力 N/mm²	Zugfestigkeit Rm Tensile Strength 抗拉强度 N/mm²	Bruchdehnung Elongation 延伸率 A_5 %	Härte Hardnes 硬度 HB	Kerbschlagarbeit der ISO V-Probe Energy of impact of ISO V-specimen ISO V 形试样的冲击能量 Joule 焦耳			
							1	2	3	Σ/n
C-04041406	RT	195	220	480	46	\	74	74	74	74
B-04031012	RT	188	213	477	47	\	72	74	73	72
B-04031013	RT	183	208	467	48	\	70	70	70	70
B-04031014	RT	186	211	462	46	\	70	71	72	71
C-04041406	RT	187	212	461	43	\	69	67	68	68
A-04021704	RT	180	205	466	42	\	68	70	70	69.3
A-04021705	RT	178	203	460	44	\	72	71	74	72.3

C) Abmaßprüfung und ZfP/ Dimensional check and NDT/尺寸检验和无损检验

Prüfung/ testing/检验	Details/ details/详内容	Ergebnis/ result/结果
Besichtigung, Maßprüfung /Visual inspection&dimensional check 内观检查&尺寸检验		OK
Oberflächenrißprüfung, /Surface crack inspection 表面裂纹检验	Waived by customer agreement 经客户同意，放弃	N/A
Durchstrahlungsprüfung, Radiographic examination 射线探伤检验	Waived by customer agreement 经客户同意，放弃	N/A
Prüfung auf Beständigkeit gegen I.K. Intergranular corrosion testing(ASTM A 262-91) 晶间腐蚀试验(ASTM A 262-91)	Waived by customer agreement 经客户同意，放弃	N/A

D) Bemerkungen/Remarks/备注:

Lieferzutand/ Delivery condition/出货状态:	gebeizt/pickled/ 酸洗

Ort /Place /场地
Fujian Quanzhou Tengda Fine Casting Co., Ltd

Datum/ Date/日期 04.04.16

Werksachverständiger /Work inspector/现场检验员
Lin Zhe Pen

SANDVIK

PRUEFZEUGNIS Nr. A/02-926101 Rev 00

Datum 2002-01-16 Seite 1/2

1331 & 1334

STAPPERT SPEZIAL-STAHL *P
HANDEL GMBH
WILLSTAETTERSTR. 15
40549 DUESSELDORF

ABNAHMEPRUEFZEUGNIS gemaess
EN 10 204 3.1.B

INSPEKTIONSSTEMPEL
SVQ 310962

Kunden Referenz

V 27248 W/SV-J3I

Kunden auftrag 2001-07-13

340-00991 STAPPERT SPEZ

Sandvik Referenz

Best. Nr.	Subs Nr.	ABSS Packzettel
	14610	35881/53
ABSS Nr.	A.code	
284-43756	03	

Materialbeschreibung

WARMBEARBEITETER NICHTROSTENDER
STABSTAHL
GESCHMIEDET
GEGLUEHT & GERICHTET
GESCHAELT UND POLIERT

Erschmelzungsart

Elektroofen

Werkstoffbezeichnung

Sandvik
SANMAC 304/SANMAC 304L

AISI	W.nr
304/304L	1.4301

EN no
1.4301/1.4307

Pruefgrundlagen/Anforderungen

TRB 100, AD-W2/W10, DIN 17440-96
EN 10088-3:-1995
ASTM A-479-00
ASME SA-479-ED-01

LIEFERUMFANG

Pos	Produktbezeichnung	Schmelze	Los	Stueck	Kg
04	MBR-SANMAC-4301-160 BW-4000-6000-	454307	65721	4	3660.0
			Total	4	3660.0

PRUEFERGEBNISSE

Chemische Zusammensetzung (Gewichts%)

Schmelze	C	Si	Mn	P	S	Cr	Ni	Co
454307	0.010	0.21	1.74	0.030	0.024	18.43	8.21	0.075

Schmelze	N
454307	0.074

Zugversuch bei Raumtemperatur

Los	Streckgrenze N/mm2 Rp0.2	Streckgrenze N/mm2 Rp1.0	Zugfestigkeit N/mm2 Rm	Bruchdehnung % A
65721	281	328	565	59

Haertepruefung

Los	Haerte	
65721	148.0	153.0

Qualitaetssicherung - Ulf Svensson/QA-manager Long Products
MTC Service / Certificates

Kerbschlagbiegeversuch, J, - 20 graden C

	Einzelwerte			Mittelwert
	Joule			Joule
Los				
65721	292	251	261	268

1331
1334

Folg. Kontrollen/Pruefungen wurden ohne Beanstandung durchgefuehrt:
- Interkristalline Korrosionspruefung gemaess DIN 50914
- Verwechslungskontrolle
- Ultraschallpruefung
- Visuelle Besichtigung und Masskontrolle.

Waermebehandlung:
Loesungsgegluecht und abgeschreckt.

Kennzeichnung der stabh:
SANDVIK, W.NR, SCHMELZE, LOS, INSPEKTIONSSTEMPEL.

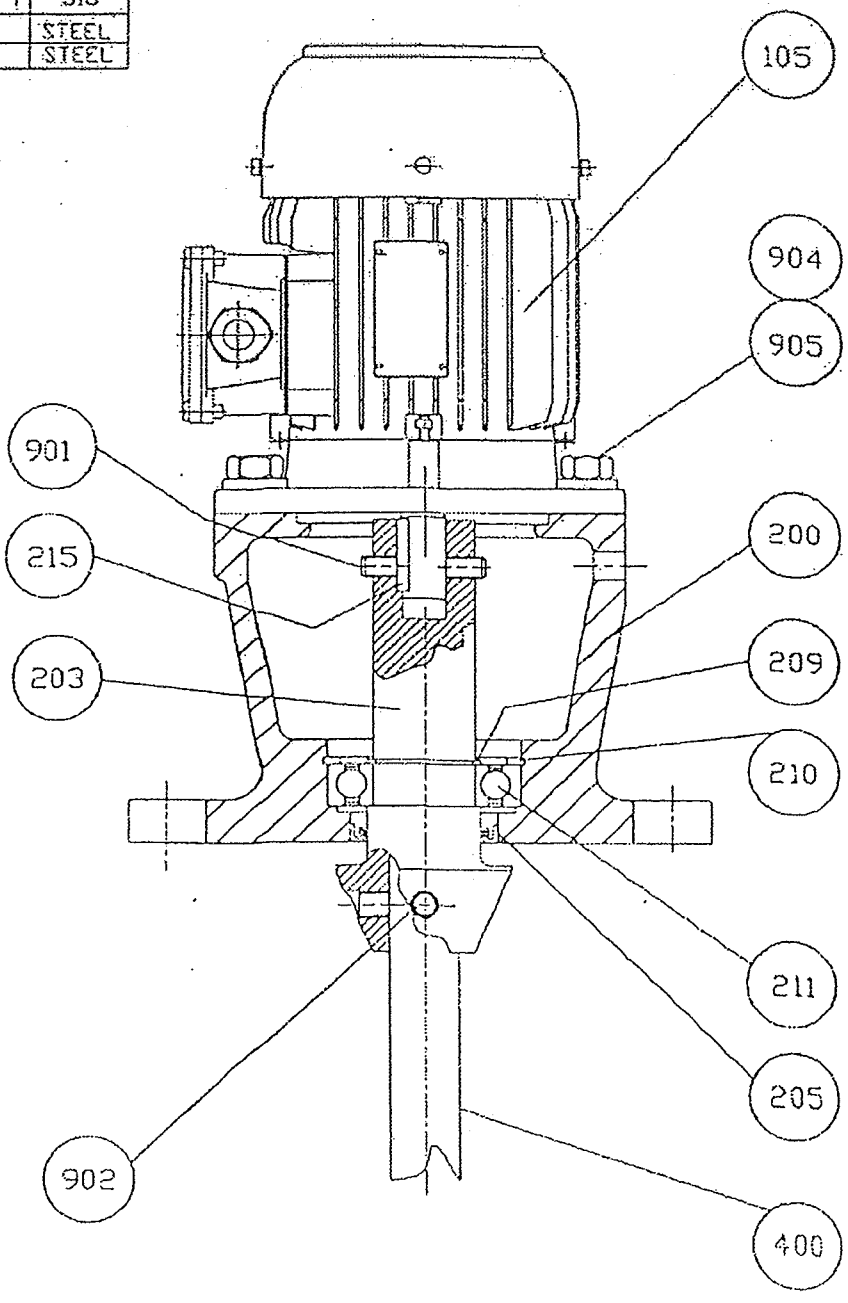
Ueberprueft nach AD-Merkblatt W0/TRD 100 durch den TUEV Nord e.V.
Zertifiziert nach Druckgeraete-Richtlinie (97/23/EG) durch die
TUEV CERT-Zertifizierungsstelle fuer Druckgeraete der
TUEV NORD GRUPPE; benannte Stelle, Kennnr. 0045.

Die gelieferten Produkte erfuellen die in der Bestellung gestellten Anforderungen.

Unsere Produkte sind entsprechend einem Qualitaetssystem hergestellt, dass nach ISO 9001 zugelassen und registriert ist.

Dieses Zeugnis ist mit EDV erstellt und ohne Unterschrift gueltig

ITEM	QTY	MATERIAL	MATERIAL
105	1	GEARMOTOR	
201	1	PEDESTAL	CAST
203	1	DRIVE SHAFT	316
205	1	LIP SEAL	
209	1	EXTERNAL CIRCLIP	STEEL
210	1	INTERNAL CIRCLIP	STEEL
211	1	BEARING	STEEL
215	1	KEY	STEEL
400	1	EXTENSION SHAFT	316
901	2	GRUBSCREW	316
902	2	SOCKET SETSCREW TO SHAFT	316
904	4	HEX HEAD SETSCREW	STEEL
905	4	FLAT & LOCKWASHER	STEEL



Chemineer

Chemineer Agitators
Kenics Static Mixers

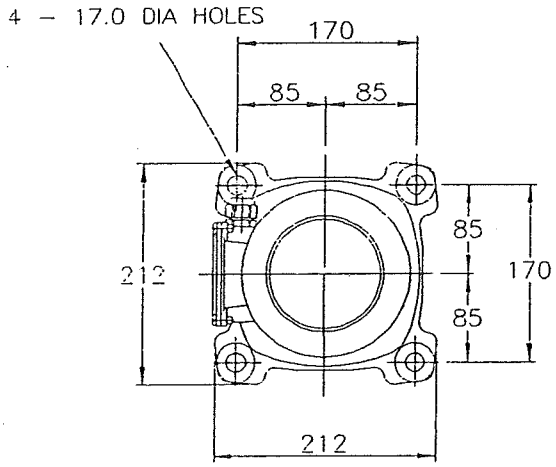
CRANMER ROAD, WEST MEADOWS, DERBY, DE21 6XT

CHEMINEER SERIAL No.

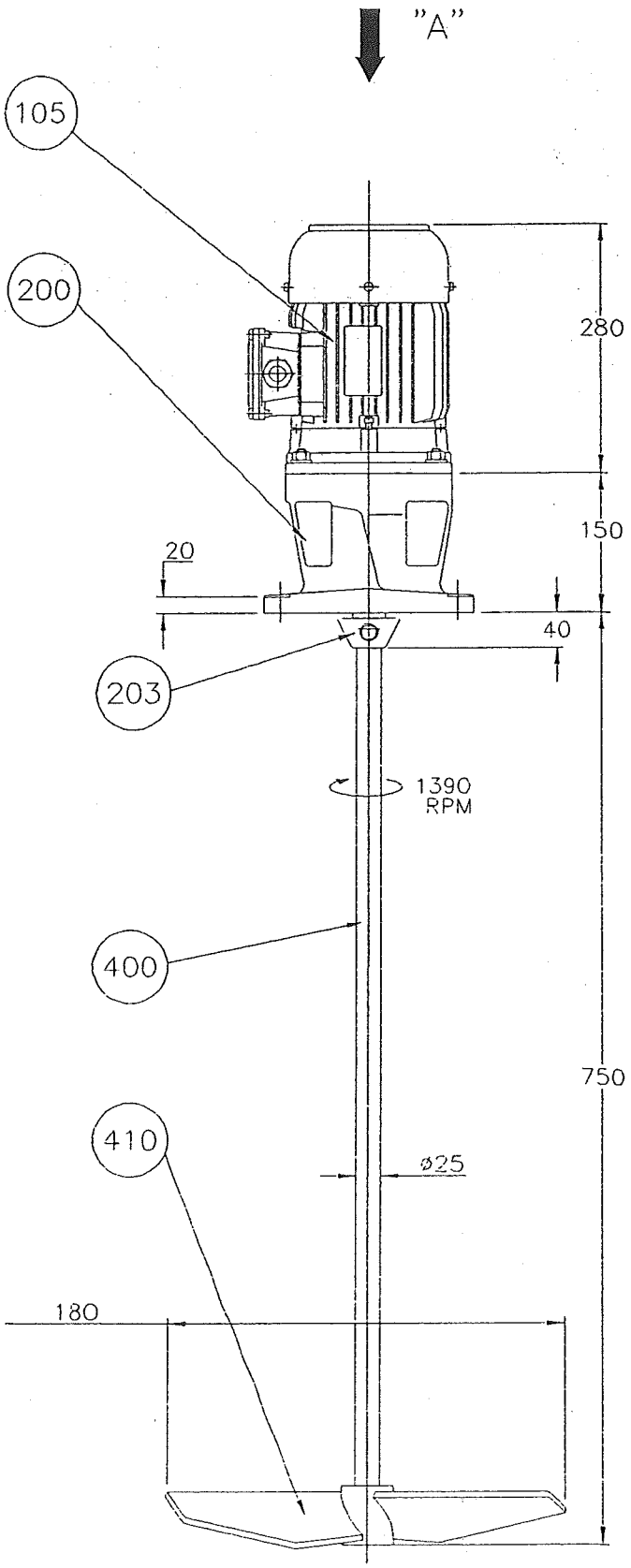
TITLE
SECTIONAL ARRANGEMENT
MODEL 30DTD

DRAWN	CHECKED	SCALE	DRAWING No.
MGW		NTS	A30259

ITEM	QTY.	DESCRIPTION	MATERIAL
105	1	MOTOR	
200	1	BEARING SUPPORT PEDESTAL	C IRON
203	1	DRIVE SHAFT ASSEMBLY	PLATED
00	1	EXTENSION SHAFT	316 SS
10	1	JP-3 STYLE IMPELLER	316 SS



VIEW ON ARROW "A"



FOR QUOTATION PURPOSES ONLY – NOT A MANUFACTURING DRAWING!

NOTES:

1. DIMENSIONS ARE FOR IP55 MOTORS
2. EXTENSION SHAFT EXTENDS 130MM INTO COUPLING

PROJECT DATA	
CUSTOMER	Tekoma B.V.
CUSTOMER P.O. No.	04-1656
CUSTOMER ITEM No.	01
QUANTITY	1
AGITATOR SUPPORT DATA	
AGITATOR SUPPORT STRUCTURE SHOULD BE DESIGNED TO WITHSTAND THESE LOADS) FOR FULL MOUNTING REQUIREMENTS REFER TO IOM. MANUAL	
STATIC WEIGHT	48 kg
TORQUE REACTION	30 Nm
BENDING MOMENT	186 Nm (CYCLIC LOAD)
CRITICAL SPEED	1015 R.P.M.
MOTOR DATA	
1.5 kW	400 VOLTS 3 PHASE 50 CYCLES
ENCLOSURE IP55	
BAFFLE RECOMMENDATIONS	
AT	OFF VESSEL WALL LONG

Drawing by Rudy.Huyge@mervers.be Tel +32 (0)3 201 47 03

Chemineer
Chemineer Agitators
Kenics Static Mixers

CHEMINEER SERIAL No. TBA

TITLE

GENERAL ARRANGEMENT
MODEL 30DTD-1.5

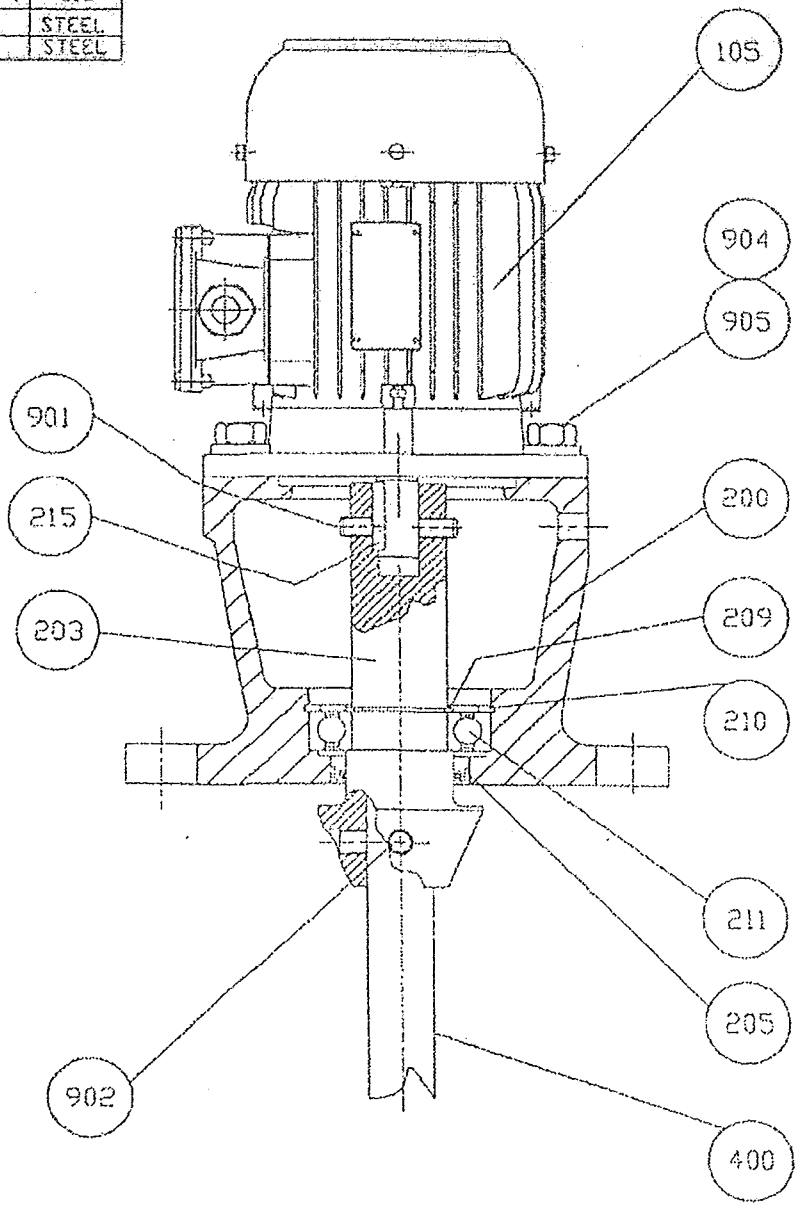
REV	DESCRIPTION	INIT	DATE
	ALTERATIONS		

CRANMER ROAD, WEST MEADOWS, DERBY, DE21 6AT

DRAWN	CHECKED	SCALE	DATE	DRAWING No.
Rudy Huyge		NTS	05/10/2004	DT-04-1656-01

DT-04-1656-01

ITEM	QTY	MATERIAL	MATERIAL
105	1	GEARMOTOR	
201	1	PEDESTAL	CAST
[illegible]3	1	DRIVE SHAFT	316
[illegible]3	1	LIP SEAL	
209	1	EXTERNAL CIRCLIP	STEEL
210	1	INTERNAL CIRCLIP	STEEL
211	1	BEARING	STEEL
215	1	KEY	STEEL
400	1	EXTENSION SHAFT	316
901	2	GRUBSCREW	316
902	2	SOCKET SETSCREW TO SHAFT	316
904	4	HEX HEAD SETSCREW	STEEL
905	4	FLAT & LOCKWASHER	STEEL



Chemineer

Chemineer Agitators
Kenics Static Mixers

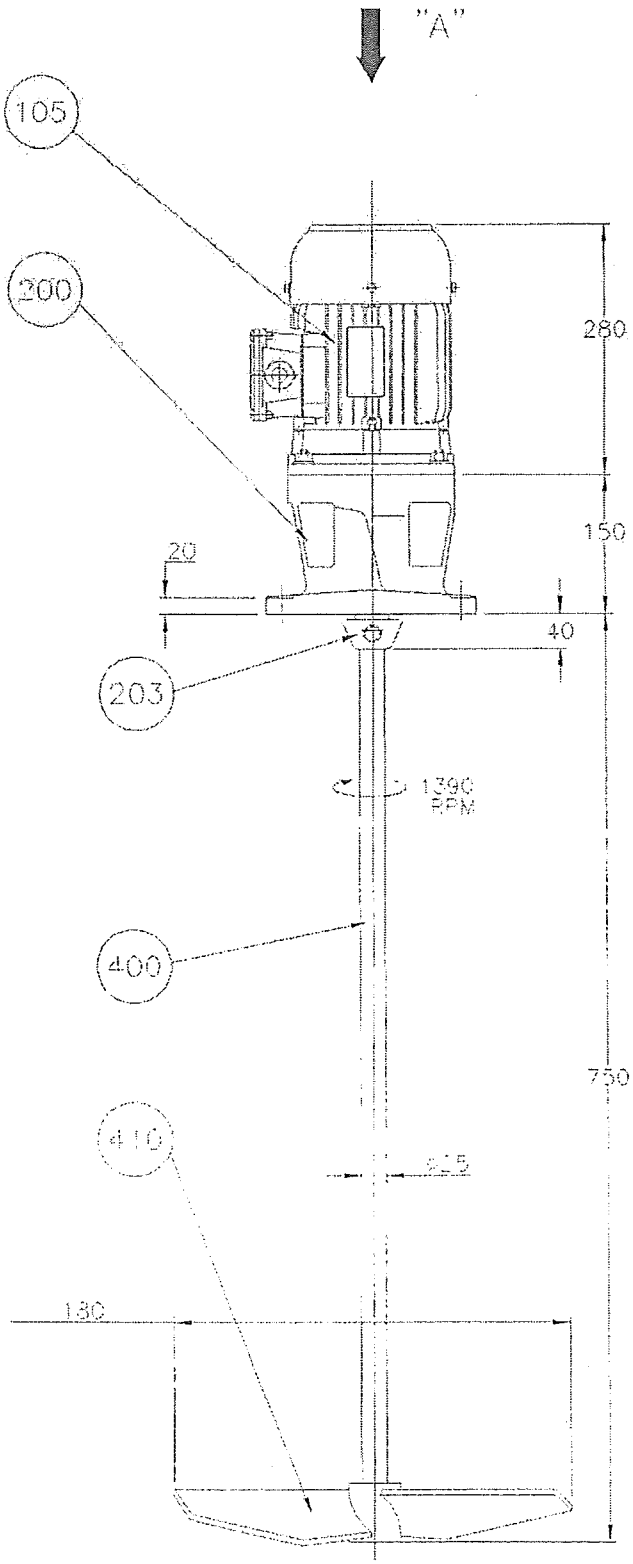
CRANKER ROAD, WEST HEADDUS, DERBY, DE21 6XT

CHEMINEER SERIAL No.

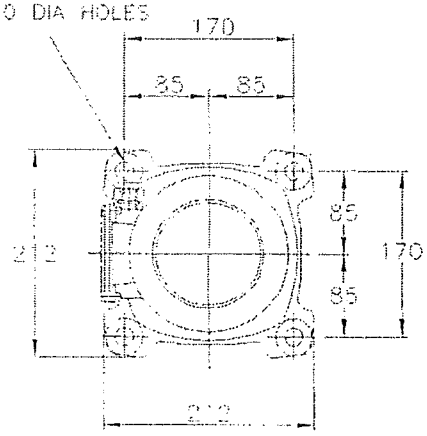
TITLE
SECTIONAL ARRANGEMENT
MODEL 30DTD

DRAWN	CHECKED	SCALE	DRAWING No.
MGW		NTS	A30259

ITEM	QTY.	DESCRIPTION	MATERIAL
105	1	MOTOR	
200	1	BEARING SUPPORT PEDESTAL	C IRON
203	1	DRIVE SHAFT ASSEMBLY	PLATED
400	1	EXTENSION SHAFT	316 SS
410	1	JP-3 STYLE IMPELLER	316 SS



4 – 17.0 DIA HOLES



VIEW ON ARROW "A"

NOTES:

1. IMPELLER IS JP-3 FOR API 610 MOTORS
2. EXTENSION SHAFT EXTENDS 120MM INTO COUPLING

FOR QUOTATION PURPOSES ONLY – NOT A MANUFACTURING DRAWING!

CUSTOMER	Tarsonis B.V.
CUSTOMER P.O. No.	04-1656
CUSTOMER ITEM No.	01
QUANTITY	1
STARTING WEIGHT	48 KG
RUNNING WEIGHT	186 KG (PUMPED LOAD)
SPEED	1390 RPM

Drawing by Rudy.duyck@chemineer.be Tel +32 (0)3 201 47 03

3					
2					
1					
NO.	REVISIONS	BY	CHK	APP	DATE

Chemineer
Chemineer Agitators
Mixing Equipment Division

CHEMINEER SERIAL No. TBA

TITLE
GENERAL ARRANGEMENT
MODEL MIXTO-LS

CHEMINEER FUND WEST MEADOWS, DERBY, DE21 6AT	DRAWN Rudy Duyck	CHECKED	SCALE NTS	DATE 29/07/2004	DRAWING No. DT-04-1656-01

econ
ball valves
carbon steel
stainless steel

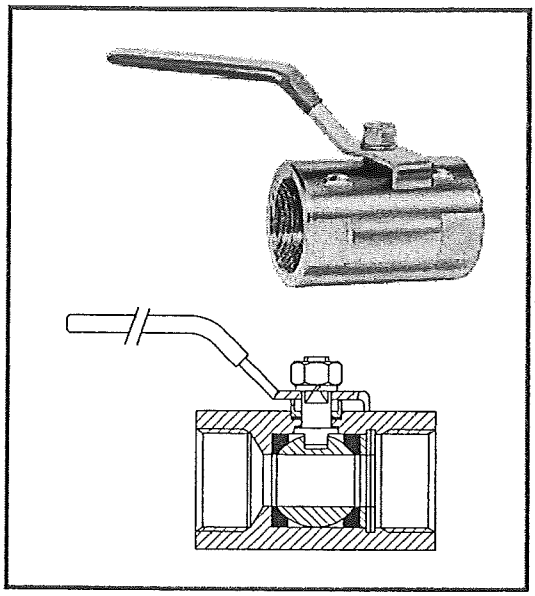
reduced bore
1 piece body
blow-out proof stem

BSPP threaded ends

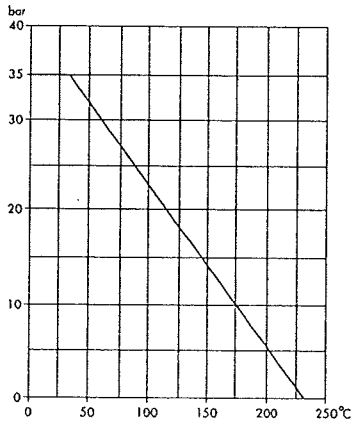
carbon steel: fig. 7722
stainless steel AISI-304: fig. 7732
stainless steel AISI-316: fig. 7742

NPT threaded ends

carbon steel: fig. 7722NPT
stainless steel: fig. 7742NPT



pressure/temperature rating:

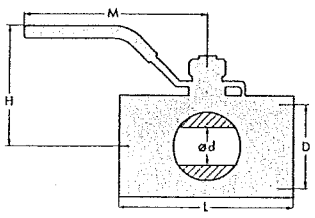


materials:

	carbon steel	stainless steel
body	ASTM A 105	AISI-304[1]) or AISI-316[2])
ball	AISI-304	AISI-304 or AISI-316
stem	AISI-304	AISI-304 or AISI-316
seat rings	PTFE	PTFE
stem seal	reinforced PTFE	reinforced PTFE
lever	steel	steel or AISI-304

[1]) with lever of steel [2]) with lever of SS AISI-304

dimensions (mm):



D	ø d	L	H	M	weight (kg)
1/4"	8	59	54	108	0.3
3/8"	10	59	54	108	0.3
1/2"	10	59	54	108	0.3
3/4"	13	67	58	108	0.5
1 "	17	73	61	108	0.7
1 1/4"	22	90	73	146	1.2
1 1/2"	25	98	73	146	1.8
2 "	32	112	85	178	2.5

econ ball valves carbon steel stainless steel

full bore
1 piece body

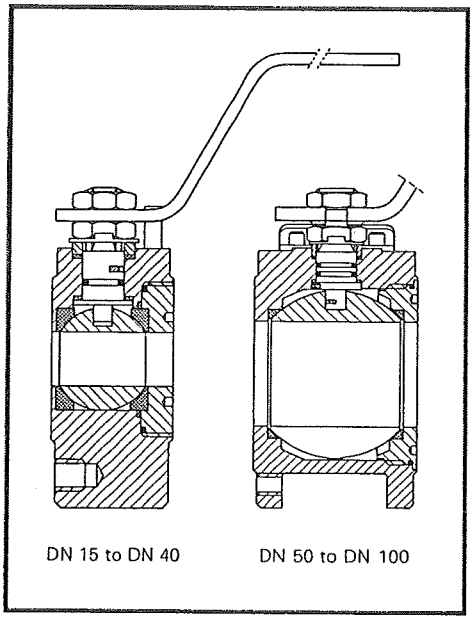
flanges drilled to DIN or ANSI

carbon steel version

PN 40 (DN 15 to DN 50): fig 7343
PN 16 (DN 65 to DN 100): fig 7343
PN 40 (DN 65 to DN 100):fig: 7344
ANSI class 150: fig.7341
ANSI class 300: fig.7351

stainless steel version

PN 40 (DN 15 to DN 50): fig.7383
PN 16 (DN 65 to DN 100): fig.7383
PN 40 (DN 65 to DN 100):fig. 7384
ANSI class 150: fig.7381
ANSI class 300: fig.7391

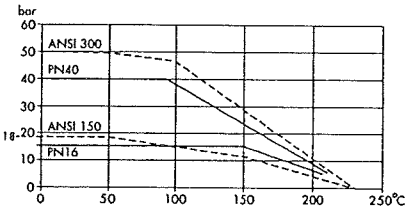


features:

- anti-static device
- blow-out proof stem
- low weight
- suitable as "dead-end shut-off" ball valve

fig.7343/7383
These ball valves are conform to the requirements regarding propane, butane and LPG gas installations of the Netherlands' Steam Institute (Stoomwezen)

pressure/temperature rating:



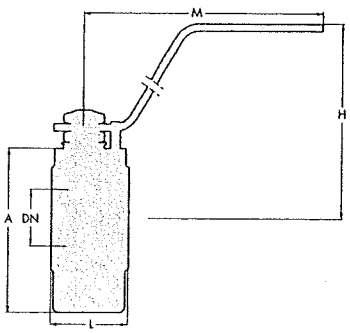
materials:

part	material according to ASTM	
	carbon steel version	stainless steel version
body DN ≤ 50	ASTM A 105	ASTM A 351 CF8M
DN ≥ 65	ASTM A 216 WCB	ASTM A 351 CF8M
ball DN ≤ 50	ASTM A 182 F316	ASTM A 182 F316
DN ≥ 65	ASTM A351 CF8M	ASTM A 351 CF8M
stem	ASTM A 182 F316	ASTM A 182 F316
seat rings	PTFE	PTFE
stem seal	PTFE/viton	PTFE/viton
lever	steel	steel

on request:

- other seat ring materials on request
- reinforced PTFE seats for higher temperatures
- with pneumatic, hydraulic, or electric actuator
- worm gear operated

dimensions (mm):

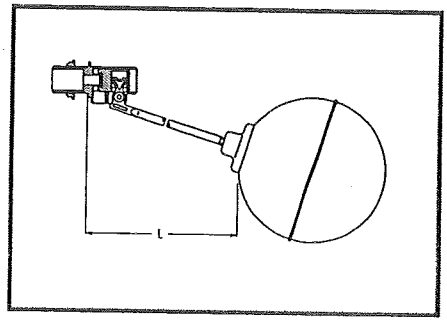


DN		L	H	M	A						weight (kg)	
					fig. 7343 7344	fig. 7383 7384	fig. 7341	fig. 7351	fig. 7381	fig. 7391	fig. 7381 7383 7384 7391	fig. 7341 7343 7344 7351
mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm		
15	½	35	95	188	75	75	75	75	75	75	1.3	1.3
20	¾	39	104	230	88	88	88	88	88	88	2	2
25	1	45	127	258	95	95	95	95	95	95	2.8	2.8
32	1¼	50	130	258	110	110	110	110	110	110	3	4
40	1½	60	143	330	130	130	130	130	130	130	4.5	6.4
50	2	72	150	330	140	140	140	150	140	155	5.8	8
65	2½	95	166	330	162/165	180/200	165	165	180	180	9.4	14.5
80	3	116	190	400	210	200/210	190	190	210	210	12.9	20.1
100	4	140	207	400	214/235	220/230	214	220	214	220	20.8	40

econ float valves brass or bronze

with copper float
BSPP threaded end

with rubber disc ring: fig. 730A
with PTFE disc ring: fig. 730B



for sizes ½", ¾" and 1" plastic floats are available on request (max. temperature 40° C)

These float valves are normally delivered with a tin soldered float; on request the float can be delivered as two parts.

materials:

body ½" to 1" - brass
1 ¼" to 2" - bronze Rg 5
float* all sizes - copper

* ≤ 1" plastic on request

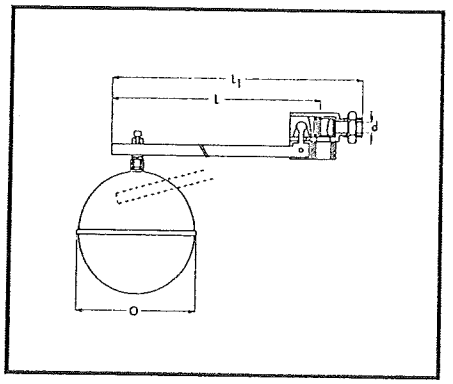
pressure/temperature rating: fig. 730A: 6 bar - 80 °C | fig. 730B: 6 bar - 185 °C

dimensions (mm):

size	½"	¾"	1"	1¼"	1½"	2"
seat ø	3.2	5.1	9.6	12.0	20.9	25.9
L approx.	310	390	450	500	520	570
float ø	115	140	155	180	205	230

econ float valves stainless steel fig. 730RVS

with stainless steel float
BSPP threaded end

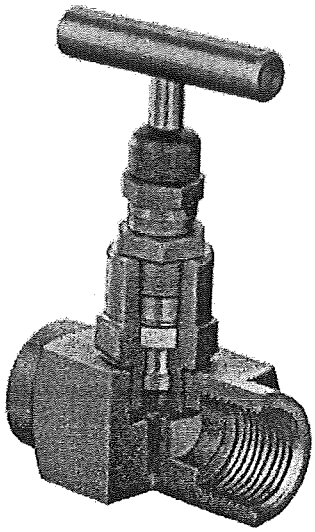


body and float of stainless steel AISI-304
max. working pressure: 4 bar

dimensions (mm):

size	d	L	L_1	O	weight (kg)
⅜"	11	405	445	120	1.4
½"	14	430	506	150	1.6
¾"	17	440	495	220	2.1
1 "	23	532	597	240	3.3
1¼"	30	520	597	240	4.2
1½"	36	538	617	260	5.4
2 "	47	575	669	300	8

econ stainless steel needle valves



characteristics:

- outside screw construction, which makes application with high temperatures possible (stem thread does not make contact with the medium)
- the bonnet is locked to the housing, through which the current safety requirements are perfectly met
- single PTFE gland packing, re-adjustable with the help of a gland (also stem threaded bush) and lock nut
- hardened movable (pilot) needle valve lengthens the life and provides a reliable seal
- stem thread sprayed with PTFE spray for lubrication
- plastic dust cap protects the stem thread against dust and dirt
- backseat construction, which implies that when the valve is fully opened, the gland packing is relieved during operation
- many possibilities for connection and installation, sizes, etc.

The Econ needle valve programme has been designed:
1. for general applications
2. for panel mounting with adjusted bonnet
3. provided with vent screw, often applied in combination with pressure gauges

needle valves for general purposes

straight pattern
BSPP threaded ends: fig. 226S
NPT threaded ends: fig. 1226S

angle pattern
BSPP threaded ends: fig. 228S
NPT threaded ends: fig. 1228S

see for other specifications next page

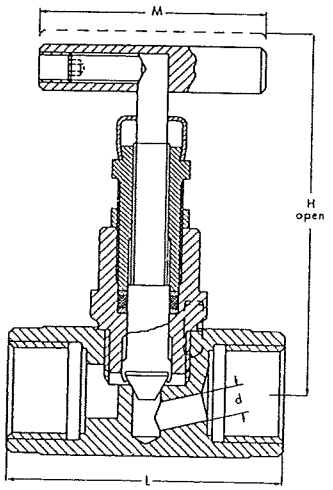


fig. 226S/1226S
1/4" to 1"

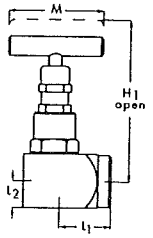


fig. 228S/1228S
1/4" and 1/2"

other types:

fig.229S (BSPP)
fig.1229S (NPT)

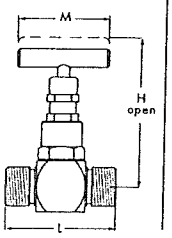


fig.230S (BSPP)
fig.1230S (NPT)

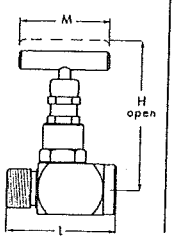


fig. 227S (BSPP)

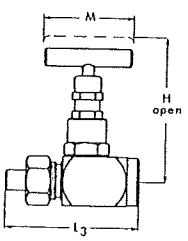


fig. 235S (BSPP)

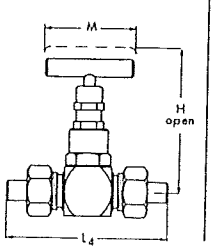


fig. 236S (BSPP)

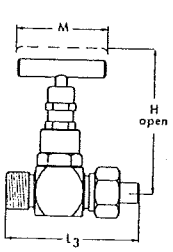
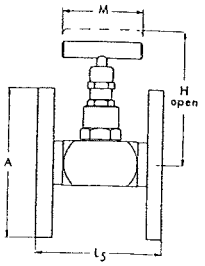


fig. 234S



DN 15, 20, 25

screwed female or male: 1/4", 3/8", 1/2", 3/4" | outside diameter of welding pipe ends: 8, 11, 14, 20

econ pressure gauges bourdon tube type liquid filled stainless steel case fig. 3660

DIN accuracy class 1.6: case ø 50 and 63 mm
DIN accuracy class 1.0: case ø 100 mm

without liquid filling

damping of vibration

with liquid filling

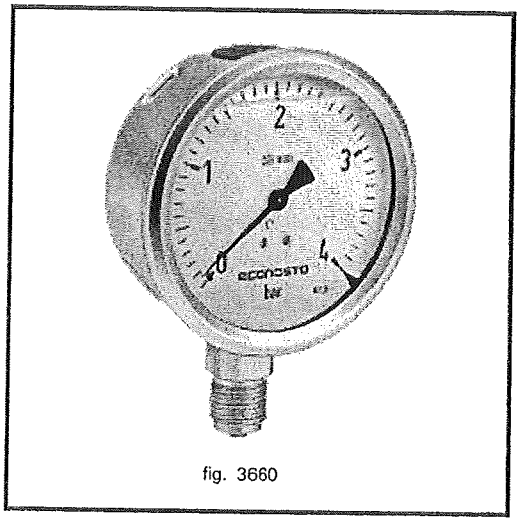


fig. 3660

other types available:

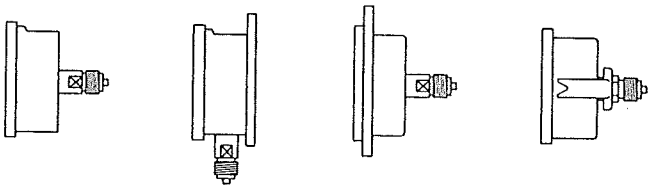


fig. 3662 | fig. 3661 | fig. 3663 | fig. 3664

case sizes: 50, 63 and 100 mm

connections:

case ø 50 and 63 mm	- BSPP 1/4" male threaded end
case ø 100 mm	- BSPP 1/2" male threaded end

pressure ranges:

pressure gauges	- 0 to 0.6/1/1.6/2.5/4/6/10/16/25/40/60/100/160/250/400/600/1000[1] bar
vacuum gauges	- –1 to 0 bar
vacuum/pressure gauges	- –1 to 0.6/1.5/3/5/9/15 bar

[1] not available for case ø 50 mm

operating temperature: ambient: –20 to +60 °C | medium: max. +60°C

liquid filling: glycerine

materials:

pressure connection	- brass
bourdon tube	- copper alloy
movement	- brass
case	- stainless steel Ws.no. 1.4301
surface/panel flange	- stainless steel Ws.no. 1.4301
window	- plastic with roll formed bezel

on request:

- other pressure connections
- with restriction screw to minimise pressure pulsation
- other scale ranges

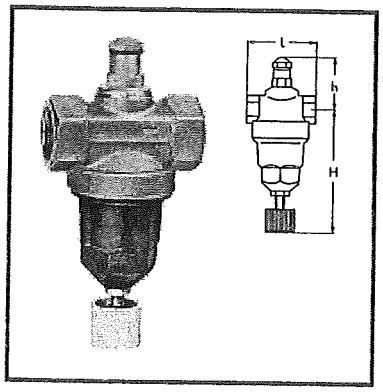
dimensions: data on request

econ pressure reducing valves small type

simple pressure reducing valve with balanced single seat valve.

for water, compressed air, non-poisonous and non-flammable gases.

BSPP threaded ends: fig. 142



max. inlet pressure	: 40 bar
outlet pressure rating	: 1 - 10 bar
max. pressure ratio	: 10 : 1
min. differential pressure	: 1 bar
max. temperature	: 70 °C

capacity: see capacity table below

materials:

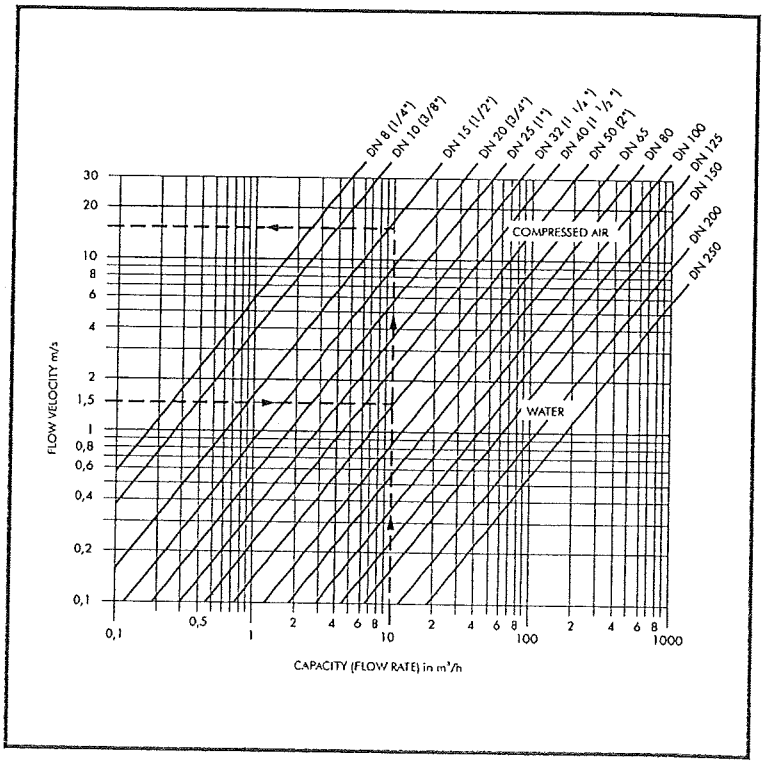
body, cover and disc guide	- brass
spring cap	- synthetic material
diaphragm, disc ring and O-ring	- NBR

dimensions (mm):

size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"
L	50	50	65	80	95	105	115	130
H	90	90	105	105	150	160	200	210
h	34	34	36	42	57	57	72	72
weight (kg)	0.3	0.3	0.45	0.6	1.35	1.8	2.9	3.8

capacities for fig. 141, 142, 143 and 148:

standard flow velocity: for water 1 to 2 m/s
for air 10 to 20 m/s



calculation example 1 (for water)
A pressure reducing valve for water with a capacity of 10 m³/h is required.
Going upward from 10 m³/h on the horizontal axis and from 1.5 m/sec. on the vertical axis, an intersection is found which results in the selection of a pressure reducing valve of DN 50.

example 2 (for air)
A pressure reducing valve to reduce compressed air from 8 to 2 bar is required with a capacity of 30 m³ free air (m³ standard volume at 0°C and 101.325 kPa). The 30 m³ free air should first be converted into m³ for the downstream pressure (in bar abs)

which means $\frac{30}{2+1} = 10$ m³/h

From the point 10 m³/h on the horizontal axis at the top of the diagram there will be an intersection for compressed air with the DN ½" line at a velocity of 15.7 m/sec.
Figure 148 - ½" or figure 141B - DN 15 is selected.

bimetal thermometers

econ bimetal thermometers brass insert

for general applications
fig. 661
fig. 662

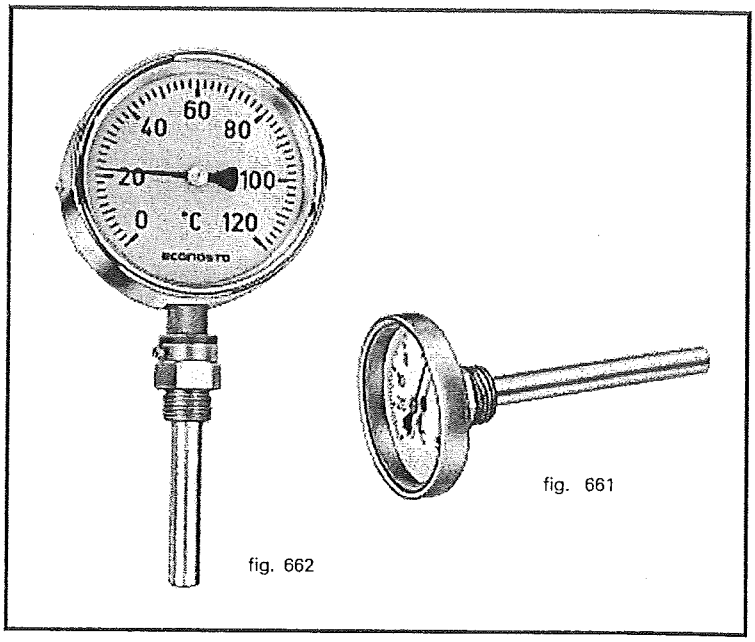


fig. 662

fig. 661

case diameter: fig. 661 - 63, 80, 100 and 160 mm
fig. 662 - 100 mm

materials:

casing	- fig. 661: aluminium - fig. 662: aluminium with stainless steelbezel ring
window	- fig. 661: acrylic plastic - fig. 662: instrument glass
dial, pointer	- white aluminium with blacklettering and pointer
insert tube	- aluminium, to use with separate thermowell only
thermowell	- brass, BSPP ½" male threaded end max. working pressure 6 bar

ranges:

scale range °C	division
–30/+50	1 : 1
–20/+60	1 : 1
–10/+50	1 : 1
0/60	1 : 1
0/80	1 : 1
0/120	2 : 1
0/160	2 : 1
0/200	5 : 1

insert length: 40[1], 60, 100, 160 and 200 mm
[1] fig. 661 only

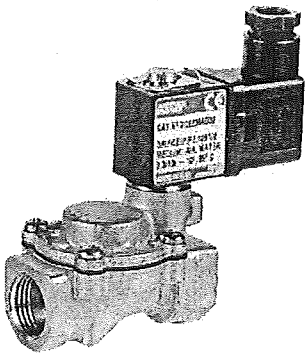
accuracy: + or –2 % of maximum scale value

on request:
- other standard scale ranges and/or immersion length
- fig. 662, case diam. 160 mm only, all of stainless steel
- thermowell of stainless steel

Magneetafsluiters
2-weg, draad
Messing , NC

econosto

Figuur 32200 - Model 1



Indirect werkend
Licht model

- fig. 32200
- ⅜" - ¾"
- 0,35-16 dP max. [bar]

Bestelinformatie

Bestelcode	Aansl.	Door-laat [mm]	dP Max. [bar]	Spoel-type	Spanning	Dich-ting	EEx Uitv.
32200	⅜	12	10 bar lucht - 10 bar water	35001	1)	2)	A)
32200	⅜	12	10 bar lucht - 10 bar water	35001	24 VDC	2)	A)
32200	⅜	12	16 bar lucht - 16 bar water	35011	3)	2)	B)
32200	⅜	12	16 bar lucht - 16 bar water	35011	24 VDC	2)	B)
32200	½	12	10 bar lucht - 10 bar water	35001	1)	2)	A)
32200	½	12	10 bar lucht - 10 bar water	35001	24 VDC	2)	A)
32200	½	12	16 bar lucht - 16 bar water	35011	3)	2)	B)
32200	½	12	16 bar lucht - 16 bar water	35011	24 VDC	2)	B)
32200	½	15	10 bar lucht - 10 bar water	35001	1)	2)	A)
32200	½	15	10 bar lucht - 10 bar water	35001	24 VDC	2)	A)
32200	½	15	16 bar lucht - 16 bar water	35011	3)	2)	B)
32200	½	15	16 bar lucht - 16 bar water	35011	24 VDC	2)	B)
32200	¾	20	10 bar lucht - 10 bar water	35001	1)	2)	A)
32200	¾	20	10 bar lucht - 10 bar water	35001	24 VDC	2)	A)
32200	¾	20	16 bar lucht - 16 bar water	35011	3)	2)	B)
32200	¾	20	16 bar lucht - 16 bar water	35011	24 VDC	2)	B)

1) Spanning
• 24VAC/50-60Hz • 115VAC/50-60Hz • 230VAC/50-60Hz

2) Dichting
• NBR (standaard) • FPM • EPDM

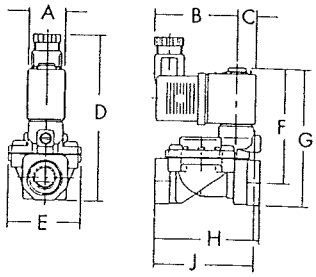
3) Spanning
• 24VAC/50-60Hz • 115VAC/50-60Hz • 230VAC/50Hz

A) Spoeltype 35001-EMA: II 2 G/D EEx m II T4

B) Op aanvraag

Afmetingen

Aansl.	Door-laat [mm]	Spoel-type	Watt	A	B	C	D	E	F	G	H	J	Gewicht
⅜	12	35001	4 ~	22	49	11	95	43	68,5	82	62	58,5	0,4
⅜	12	35001	6,9 =	30	57	15	96,5	43	68,5	82	62	62,5	0,4
⅜	12	35011	5 ~	22	49	11	95	43	68,5	82	62	58,5	0,5
⅜	12	35011	6,9 =	30	57	15	96,5	43	68,5	82	62	62,5	0,5
½	12	35001	4 ~	22	49	11	95	43	68,5	82	62	58,5	0,4
½	12	35001	6,9 =	30	57	15	96,5	43	68,5	82	62	62,5	0,4
½	12	35011	5 ~	22	49	11	95	57	71	85	81,5	75	0,5
½	12	35011	6,9 =	30	57	15	96,5	57	71	85	81,5	79	0,5
½	15	35001	4 ~	22	49	11	95	57	71	85	81,5	75	0,5
½	15	35001	6,9 =	30	57	15	96,5	57	71	85	81,5	79	0,5
½	15	35011	5 ~	22	49	11	95	57	71	85	81,5	75	0,5
½	15	35011	6,9 =	30	57	15	96,5	57	71	85	81,5	79	0,5
¾	20	35001	4 ~	22	49	11	95	68	79,5	96	95	87	0,8
¾	20	35001	6,9 =	30	57	15	96,5	68	79,5	96	95	91	0,8
¾	20	35011	5 ~	22	49	11	95	68	79,5	96	95	87	0,8
¾	20	35011	6,9 =	30	57	15	96,5	68	79,5	96	95	91	0,8



vooraanzicht zijaanzicht

2003

Magneetafsluiters
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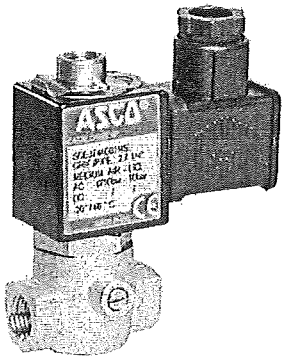
Figuur 33020, 33021 en 33022



Bestelinformatie

Bestelcode	Stro-mings-vorm	Aansl. poort 1-2	Aansl. poort 3	Door-laat [mm]	dP Max. [bar]	Spoel-type	Span-ning	Dich-ting	EEx Uitv.
33020	NC	¼	⅛	2	16 bar lucht - water - l. olie	35012	1)	2)	A)
33020	NC	¼	⅛	2	8 bar lucht - water - l. olie	35012	24VDC	2)	A)
33020	NC	¼	⅛	2	16 bar lucht - water - l. olie	35030	1)	2)	B)
33020	NC	¼	⅛	2	16 bar lucht - water - l. olie	35030	24VDC	2)	B)
33020	NC	¼	⅛	2,7	10 bar lucht - water - l. olie	35012	1)	2)	A)
33020	NC	¼	⅛	2,7	5 bar lucht - water - l. olie	35012	24VDC	2)	A)
33020	NC	¼	⅛	2,7	10 bar lucht - water - l. olie	35030	1)	2)	B)
33020	NC	¼	⅛	2,7	10 bar lucht - water - l. olie	35030	24VDC	2)	B)
33020	NC	¼	⅛	3,8	5 bar lucht - water - l. olie	35012	1)	2)	A)
33020	NC	¼	⅛	3,8	2 bar lucht - water - l. olie	35012	24VDC	2)	A)
33020	NC	¼	⅛	3,8	5 bar lucht - water - l. olie	35030	1)	2)	B)
33020	NC	¼	⅛	3,8	5 bar lucht - water - l. olie	35030	24VDC	2)	B)
33021	NO	¼	⅛	2,5	10 bar lucht - water - l. olie	35012	1)	2)	A)
33021	NO	¼	⅛	2,5	10 bar lucht - water - l. olie	35030	1)	2)	B)
33021	NO	¼	⅛	2,5	10 bar lucht - water - l. olie	35030	24 VDC	2)	B)
33022	UN	¼	⅛	2,7	8 bar lucht - 4 bar water en l. olie	35012	1)	2)	A)
33022	UN	¼	⅛	2,7	8 bar lucht - 4 bar water en l. olie	35030	1)	2)	B)
33022	UN	¼	⅛	2,7	4 bar lucht - water - l. olie	35030	24 VDC	2)	B)
33022	UN	¼	⅛	3,8	4 bar lucht - water - l. olie	35012	1)	2)	A)
33022	UN	¼	⅛	3,8	4 bar lucht - water - l. olie	35030	1)	2)	B)
33022	UN	¼	⅛	3,8	2 bar lucht - water - l. olie	35030	24 VDC	2)	B)

1) Spanning
- 24VAC/50Hz • 115VAC/50Hz • 230VAC/50Hz

2) Dichting
- NBR (standaard) • FPM • EPDM

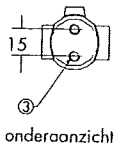
A) Geen explosieveilige uitvoering voor dit model leverbaar

B) Diverse explosieveilige uitvoeringen leverbaar, zie selectietabel in de inleiding van deze sectie

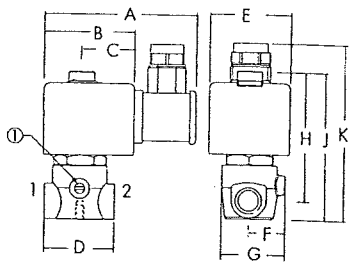
Direct werkend
Poort 3 aan bovenzijde

- fig. 33020
- fig. 33021
- fig. 33022

- Poort 1 en 2 : ¼"
- Poort 3 : ⅛"
- 0-16 dP max. [bar]
- NC - NO - UN



onderaanzicht



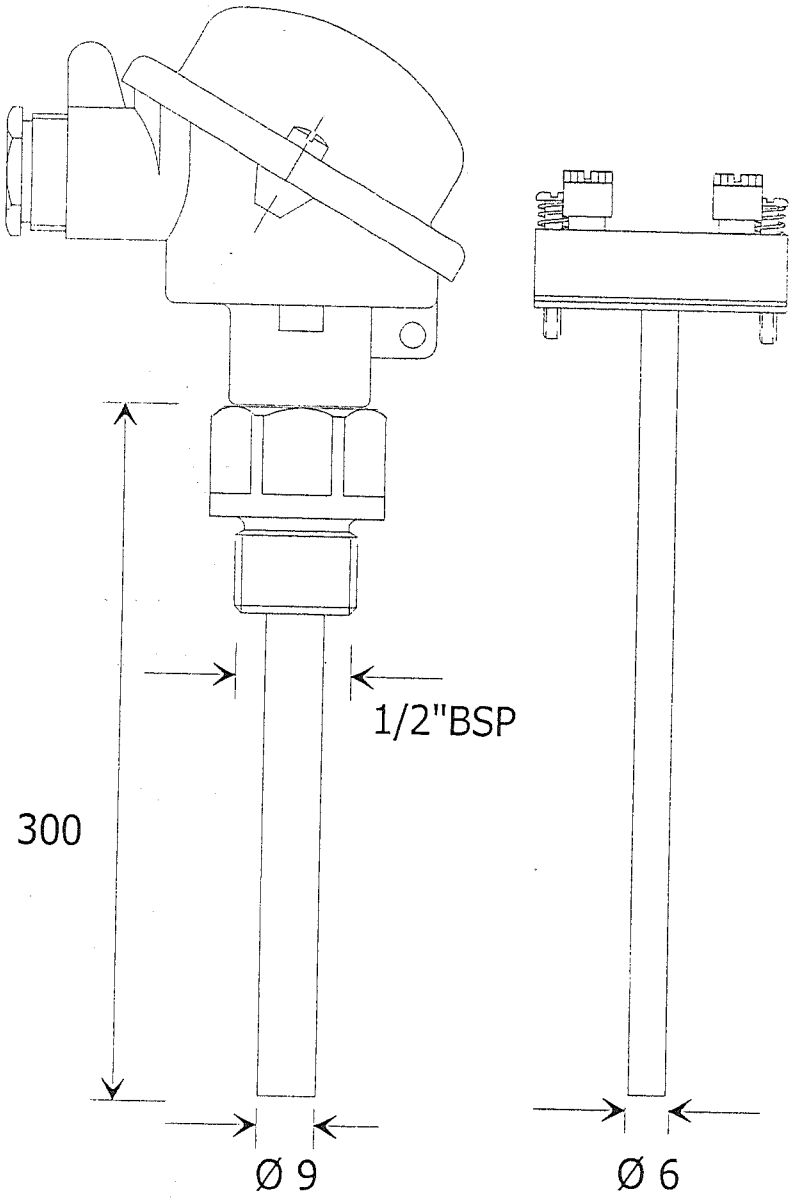
Afmetingen

Aansl. poort 1-2	Aansl. poort 3	Type	Volt	A	B	C	D	E	F	G	H	J	K	Gewicht
¼	⅛	35012	8 ~	70	35	20	40	30	20	35	88	82	98	0,34
¼	⅛	35012	9,7 =	70	35	20	40	30	20	35	88	82	98	0,34
¼	⅛	35030	10,5 ~	86	50	30	40	45	20	35	88	82	98	0,51
¼	⅛	35030	11,2 =	86	50	30	40	45	20	35	88	82	98	0,51

1 = noodhandbediening
3 = twee M4 bevestigingsgaten (6 mm diep)

2003i.

Langkamp Technology BV
55-13111400-0300



Element	1 x Pt100-3L
Tolerance	IEC 751 Class B
Connection Head	Form B (M24 x 1,5)
Pocket tube	Ø 9 x 1 mm (1.4571)
Pocket length	300 mm
Process Connect.	1/2"BSP /M24x1,5, SW 27 (1.4571)
Probe	Ø 6,0 mm,vibration resistant, Exchangable
Temp.-Range	-50 .. 400 °C

all dimensions in mm
above construction may vary in reality