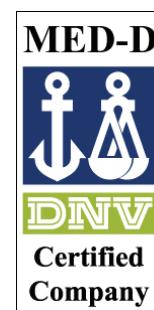


# **Operation and Service Manual**

## **for HERMetic DIP2 GT Chem**

**Note:** before using the instrument  
please read this book.



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## 2. General

The HERMetic DIP Type 2 GT Chem is designed for checking that the bottom of closed and inerted tanks is dry and free of deposits after crude oil washing. It consists of a graduated brass/stainless steel weight attached to a graduated stainless steel tape wound up on reel and an adapter for connecting a HERMetic valve. The operation is carried out under closed condition with no vapour escape into the atmosphere.

The HERMetic DIP Type 2 GT Chem can also be used for estimating the distance between the bottom of the tank and the zero reference level of the tank.

The tape is of combined type, i.e. showing on the same side the metric and inch scales.

The accuracy of the tape is of class II (according to OIML recommendation n° 35), i.e. +/- 6 mm over 30 meters (approx. +/- 1/4" over 100 ft).

The tip end of the dipping rod corresponds to the zero of the tape.

## 3. Recommendation for safe use

This Operation and Service Manual is a guide in order to help the user to operate the instrument safely and correctly.

Nevertheless the maker disclaims all responsibility and liability for damage resulting from the use of the equipment regardless of the cause of the damage.

The I.M.O. requirements on Tanker Safety and Pollution Prevention, 1978 - resolution A.446 (XI) - § 4.4.4 :

*"Means such as level gauges, hand dipping, and stripping system performance gauges as referred to in paragraph 4.4.8. shall be provided for checking that the bottom of cargo tanks are dry after the crude oil washing. Suitable arrangements for hand dipping must be provided at the aftermost portion of a cargo tank and in three other suitable locations."*

This product and his use is / may be related to international, national, local or company regulations or standards. It is the customer / user responsibility to ensure that the way to use the device complies with such applicable regulations or standards.

This device is a portable product. It must not be permanently installed on the tank and must be disconnected after use and stored in a safe and dry area.

## 4. General information

### 4.1 Disclaimer

This manual is designed and written to provide information with regard to the subject matter involved. Enraf Tanksystem SA makes no warranty, express or implied, that it is fit for any purpose whatsoever; or to the absolute sufficiency of the material presented.

Enraf Tanksystem SA assumes no responsibility for any inaccuracies in reproduction or errors in interpretation of any authority. Enraf Tanksystem SA reserves the right to modify or amend this manual, without prior notification, but Enraf Tanksystem SA assumes no responsibility to update or issue corrections.

### 4.2 Shipment note

The following parts should be included in the shipment:

- 1 instrument;
- 1 Operation and Service Manual.

### 4.3 Initial inspection

Check the contents of the shipment for completeness and note whether any damage has occurred during transport. Carry out the "Initial test before installing the instrument" to verify the good functioning. If the contents are incomplete, or if there is damage, do not use the device. A claim should be filled with the carrier immediately, and Enraf Tanksystem SA Sales or Service organization should be notified in order to facilitate the repair or replacement of the instrument.

### 4.4 Documentation discrepancies

The design of the instrument is subject to continuous development and improvement. Consequently, the instrument may incorporate minor changes in detail from the information contained in the manual.

### 4.5 Warranty

12 months after installation but max. 18 months after delivery ex works.

**The Vendor undertakes to remedy any defect resulting from faulty design materials or workmanship. The Vendor's obligation is limited to the repair or replacement of such defective parts by his own plant or one of his authorized service stations. The Purchaser shall bear the cost and risk of transportation of defective parts and repaired parts supplied in replacement of such defective parts.**

**This warranty does not apply to those items which by their nature are subject to deterioration or consumption in normal service, and which must be cleaned, or replaced on a routine basis.**

**When returned to Enraf Tanksystem SA equipment must be contamination-free. If it is determined that the Purchasers equipment is contaminated, it will be returned to the Purchaser at the Purchasers expense. Contaminated equipment will not be repaired, replaced, or covered under any warranty until such time that the Purchaser decontaminates the said equipment.**

The Purchaser shall notify by fax, telex or in writing of any defect immediately upon discovery, specifying the nature of the defect and/or the extend of the damage caused thereby.

Where no other conditions have been negotiated between the Vendor and the Purchaser "General Conditions 188" of United Nations shall apply.

Unauthorized repair or component replacement by non original spare parts by the Purchaser will void this guarantee and may impair the good functioning of the instrument.

This warranty is expressly in lieu of any and all other warranties and representations expressed or implied, and all other obligations or liabilities on the part of the Vendor (Enraf Tanksystem SA) including but not limited to, the warranty of merchantability or fitness for a particular purpose.

In no event shall Enraf Tanksystem SA be liable for indirect, incidental or consequential loss or

damage or failure of any kind connected with the use if its products or failure of its products to function or operate properly.

Enraf Tanksystem SA do not assume the indemnification for any accident or damage caused by the operation of its product and the warranty is limited to the replacement of parts or complete goods.

#### **4.6 Spare parts**

When ordering spares identify the spare part by TS number and description. Refer to section "Drawings".

Some spares might be repairable; in this case send part to any authorized service center or to the factory.

In case of urgency replacement units can be available while stocks last.

#### **4.7 Service and Repair**

The customer should take care of the freight and customs clearance charges. If units are sent on "freight collect " the charges will be invoiced to the customer.

When returning units or parts for repair to the factory please fill out a service request form (see next page).

## **Service Request**

Customer's address: .....

.....  
.....  
.....

Telephone: .....

Telex: .....

Fax: .....

Type of unit or part: .....

.....  
.....

Short description of defective unit or part: .....

.....  
.....  
.....

Do you want a quotation before repair is started:.....yes / no.....

Repaired unit has to be returned to the following address:

.....  
.....  
.....  
.....

**5. Worldwide Service Stations network**

*The updated list can be found on our website [www.tanksystem.com](http://www.tanksystem.com)*

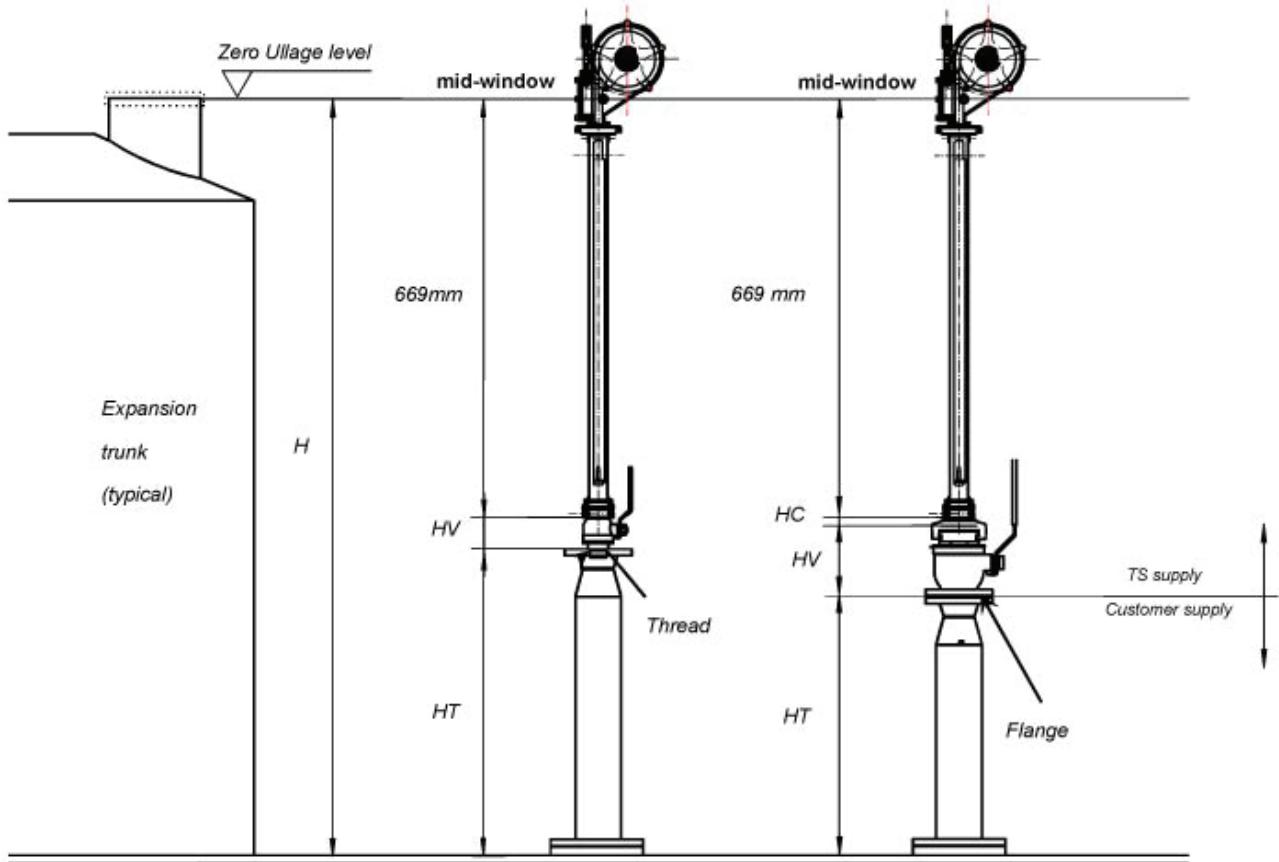
COUNTRY	ADDRESS	TELEPHONE/FAX/E-MAIL
SWITZERLAND	ENRAF TANKSYSTEM SA 2, rue de l'Industrie CH-1630 BULLE	Tel : +41-26-91 91 500 Fax : +41-26-91 91 505 Tanksystem@honeywell.com
CANADA	PYLON ATLANTIC A Div. Of Pylon Electronics Inc. 31 Trider Crescent., DARTMOUTH, N.S. B3B 1V6	Tel : +1-902-4683344 Fax : +1-902-4681203 halifax_csr@pylonelectronics.com
CHINA	HUA HAI EQUIPMENT & ENGINEERING CO LTD Factory 7, Lane 1365, East Kang Qiao Road Kang Qiao Industrial Zone, Pu Dong SHANGHAI, P.C. 201315	Tel : +86-21-68183183 Fax : +86-21-68183115 huahaish@huahaiee.com
GREECE	SPANMARIN 86, Filinos Street GR-185 36 PIRAEUS	Tel : +30-210-4294498 Fax : +30-210-4294495 spanmarin@ath.forthnet.gr
JAPAN	DAIWA HANBAI CORPORATION LTD 2-10-31, Mitejima, Nishiyodogawa-ku OSAKA 555-0012	Tel : +81-6-64714701 Fax : +81-6-64729008 daiwa471@silver.ocn.ne.jp
KOREA	World Ocean CO., LTD Rm1001, Hae-deok Bldg., 1212-11 Choryang-dong Dong-Gu BUSAN	Tel : +82-51-462-2554/5 Fax : +82-51-462-0468 marine@worldocean.co.kr
MEXICO	URBAN DEL GOLFO S.A. DE C.V. Ave. Ejército Mexicano 1902 Col. Loma del Gallo 89460 CD. MADERO, TAMPS. MEXICO	Tel : +52-833-2170190 Fax : +52-833-2170190 urbansa@prodigy.net.mx
NETHERLANDS	B.V. TECHNISCH BUREAU UITTENBOGAART Brugwachter 13 NL-3034 KD ROTTERDAM	Tel : +31-10-4114614 Fax : +31-10-4141004 info@tbu.nl

*The updated list can be found on our website [www.tanksystem.com](http://www.tanksystem.com)*

COUNTRY	ADDRESS	TELEPHONE/FAX/E-MAIL
PORTUGAL	CONTROLIS Soc. Com. Equipamentos de Controlo, Lda. Rua Conceição Sameiro Antunes, 26E 2800-379 COVA DA PIEDADE	Tel : +351-21-2740606 Fax : +351-21-2740897 controlis@netc.pt
RUSSIA	NPP "GERDA" Vilisa Latsisa str. 17 Building 1 125480 MOSCOW	Tel : +7-495-7558845 Fax : +7-495-7558846 info@gerda.ru
SINGAPORE	HUBBELL INT'L (1976) PTE LTD 322 Thomson Road SINGAPORE 307665	Tel : +65-6-2557281 Tel : +65-6-2550464 Fax : +65-6-2532098 hubbell@mbox2.singnet.com.sg
SPAIN	E.N.I. Electronica y Neumatica Industrial, S.A. C/Jon Arrospide, 20 (Int.) 48014 BILBAO	Tel : +34-94-4746263 Fax : +34-94-4745868 eni.tecnica@eni.es
SWEDEN	INSTRUMENTKONTROLL Lars Petersson AB Varholmsgatan 1 414 74 GÖTEBORG	Tel : +46-31-240510 Tel : +46-31-240525 Fax : +46-31-243710 Info@instrumentkontroll.se
TURKEY	YEDI DENIZ Setustu, Izzetpasa Yok.1 TR 34427 Kabatas ISTANBUL	Tel : +90.212.251 64 10 / 3 lines Fax : +90.212.251 05 75 servicestation@yedideniz.net
UNITED ARAB EMIRATES	MARITRONICS TRADING L.L.C. P.O. Box 6488 Shed # 72, Jadaf Ship Docking Yard DUBAI	Tel : +971-4-3247500 Fax : +971-4-3242500 service@maritronics.com
UNITED KINGDOM	ENERGY MARINE (INTERNATIONAL) LTD. 12 Clipstone Brook Industrial Estate Cherrycourt Way LEIGHTON BUZZARD, BEDS LU7 4TX	Tel : +44-1525-851234 Fax : +44-1525-852345 info@engmar.com
U.S.A / TEXAS	HONEYWELL HERMETIC 4522 Center Street DEER PARK, TX 77536	Tel : +1-281-930 1777 Fax : +1-281-930 1222 Toll free call in the USA: 1-800-900 1778 hermetic@honeywell.com

## 6. Exemples of installation of the Dip 2 GT Chem

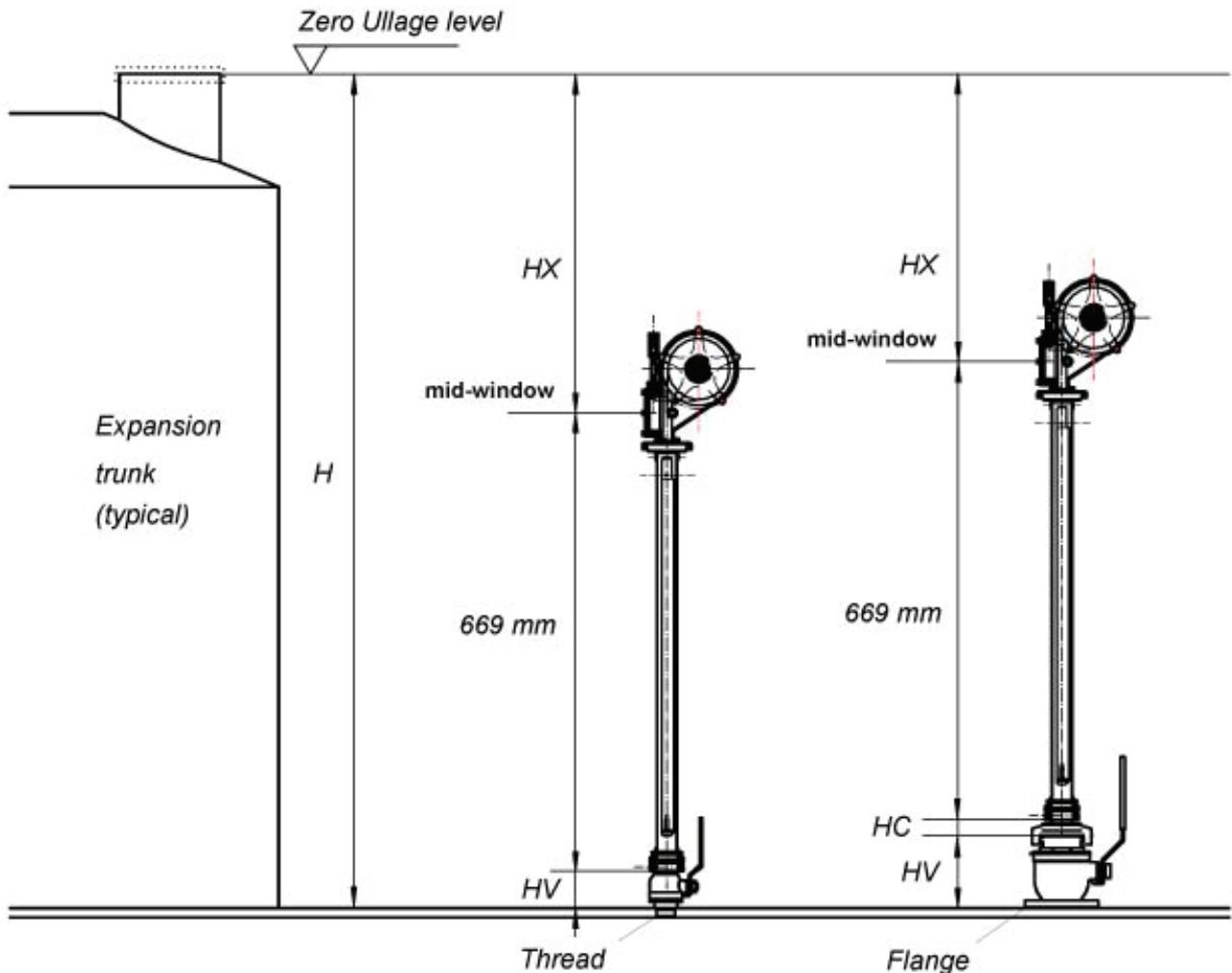
### 6.1 Exemple of installation with elevatory trunk, connector Q1 (1")



Valve designation	A.1-SS	C.1-SS	C.1-SS	C.1-SS	C.2-SS C.2-SS-W	C.2-SS C.2-SS-W	A.2-SS	A.2,5-SS	A.4-SS
Boring	1"	1"	1"	1"	2"	2"	2"	2,5"	4"
Bottom connection	thread	thread	flange JIS 5K25	flange JIS 5K50	thread	flange	flange	flange	flange
*) HV (mm)	120	65	79	79	141	141	172	99	140
HC (mm)	na	na	na	na	14	14	41	53	58
*) HT (mm)	H-789	H-734	H-748	H-748	H-824	H-824	H-882	H-821	H-867

\*) Dimension HV is without gasket. If gaskets are used dimension HT is reduced by thickness of gasket.

## 6.2 Example of installation with correction table, connector Q1 (1")



Valve designation	A.1-SS	C.1-SS	C.1-SS	C.1-SS	C.2-SS C.2-SS-W	C.2-SS C.2-SS-W	A.2-SS	A.2,5-SS	A.4-SS
Boring	1"	1"	1"	1"	2"	2"	2"	2,5"	4"
Bottom connection	thread	thread	flange JIS 5K25	flange JIS 5K50	thread	flange	flange	flange	flange
*) HV (mm)	120	65	79	79	141	141	172	99	140
HC (mm)	na	na	na	na	14	14	41	53	58
*) HX (mm)	H-789	H-734	H-748	H-748	H-824	H-824	H-882	H-821	H-867

\*) Dimension HV is without gasket. If gaskets are used dimension HX is reduced by thickness of gasket.

## 7. Operation

1. Install the HERMetic DIP2 GT Chem on the HERMetic valve via the quick coupling device.
2. Open the valve.
3. Lower the dipping rod into the tank down to reaching the bottom. Looking to the tape graduation and feeling the weight dropping off the hand line will allow the operator to evaluate when the level indicating rod is reaching the tank bottom.
4. Once the rod is touching the bottom of the tank, the presence of deposits can be determined by releasing slightly more tape.
5. If the dip remains in the vertical position, that means it has penetrated deposits.
6. If it lays on the side, no deposits are present, providing they are not too hard for the dip to penetrate in or not too soft for the dip to remain standing up.
7. Once the rod has reached the bottom of the tank the distance between the bottom and the middle of the window of the DIP can be determined.
8. After this check rewind the dipping rod into its storage tube.
9. Close the valve.
10. Disconnect the DIP2 GT Chem.
11. Clean the DIP 2 GT Chem before the next check to avoid contamination.

## 8. Maintenance

### 8.1 Care

For long service life, maintain the HERMetic DIP 2 clean and well lubricated and, when not in use, store it in a dry and protected location.

The spring loaded coupling and mating Valve quick-connect nipple must be kept free of corrosion.

If grease is used for this purpose, it must be one which contains graphite.

Check periodically whether all the sealings are still OK.

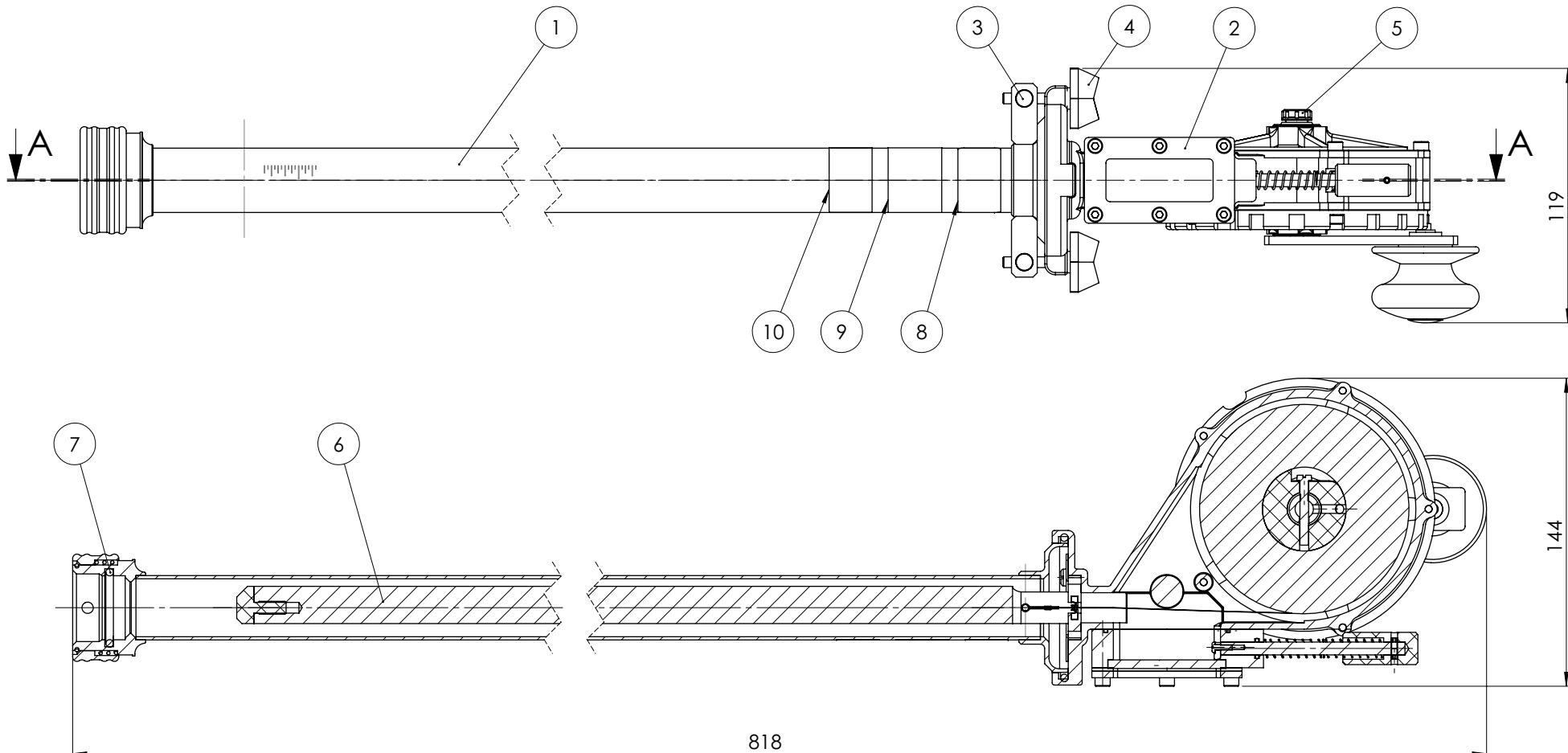
Check the tape wiper for wear.

Check periodically the tape for kinks.

When ordering spare parts, always state the drawing and the item number.

**9. Drawings**

	ND	TS	DESCRIPTION
	30704	98151	HERMetic Dip 2 GT Chem
	20366	98151A	Carter winder FFKM assy
	41280	98144C	Tape assy w/o winder 30m
	30545	10314	Crank assy FFKM
	30237	10535	Wiper PTFE
	41023	20613	Kit inlet valve FFKM
	30419	19506	Dipping rod assy
	41039	22564	Adaptor 1"/2"



COUPE A-A

Item	Qty	Weight	Description	Material	TS	ND
1	1	930.3	Storage tube DIP 2 GT		98144A	30679
2	1	2314.4	Carter winder FFKM assy		98151A	20366
3	2	5.5	Pivot	A1	20605	41013
4	2	8.4	Wing screw		20609	41019
5	1	0.7	Cap G1/8" with gasket		14149	40764
6	1	1181.6	Dipping rod assy		19506	30419
7	1	1.0	O-Ring ø 29,75 x 3,53	FFKM	11147	
8	1	0.1	Label "DIP 2"	-	50010	40348
9	1	0.2	Label "Enraf Tanksystem"		50006	40343
10	1	0.1	Sticker "Earth strap"	-	50072	41143
11	1	0.0	Hexagon key 1.3 mm		50350	ISO2936
12	1	0.0	Bag		50335	

TOLERANCES UNLESS OTHERWISE SPECIFIED

Norm.	Size	Over	6	30	100	300	1000	Angles
Fit	To							
Fine	±		0.05	0.1	0.15	0.2	0.3	0.5

REMOVE ALL BURRS AND SHARP EDGES

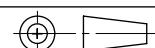
Drawn:  
CPI 19.02.2009

Weight:  
4456.3 Eff.

ISSUE 1 : 19.2.2009

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MPSA  
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Replacement for:  
ND

Replaced by:  
ND

TS 98151

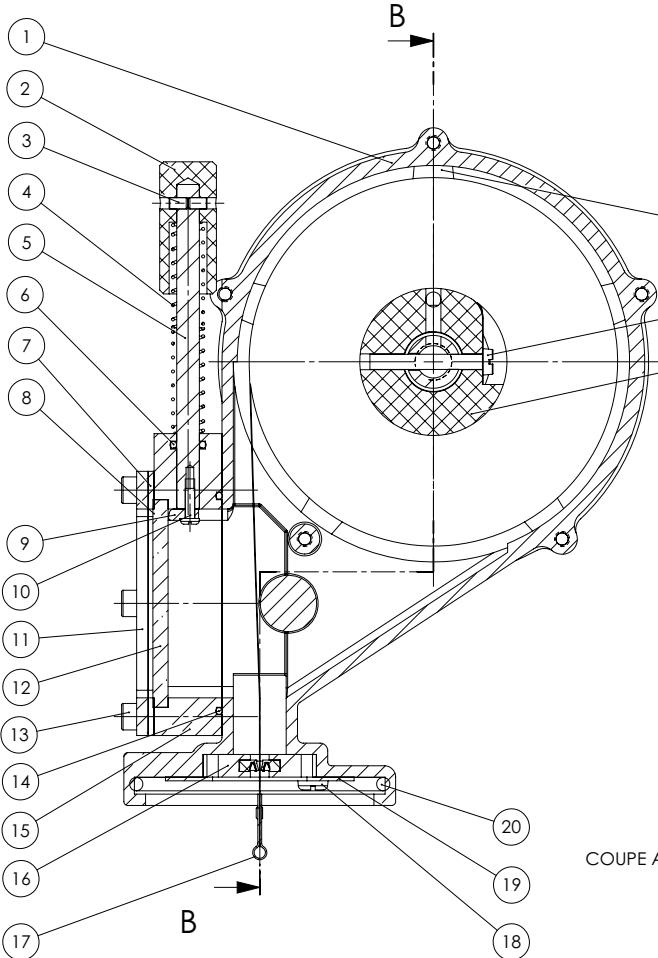
ND 30704

REF ND

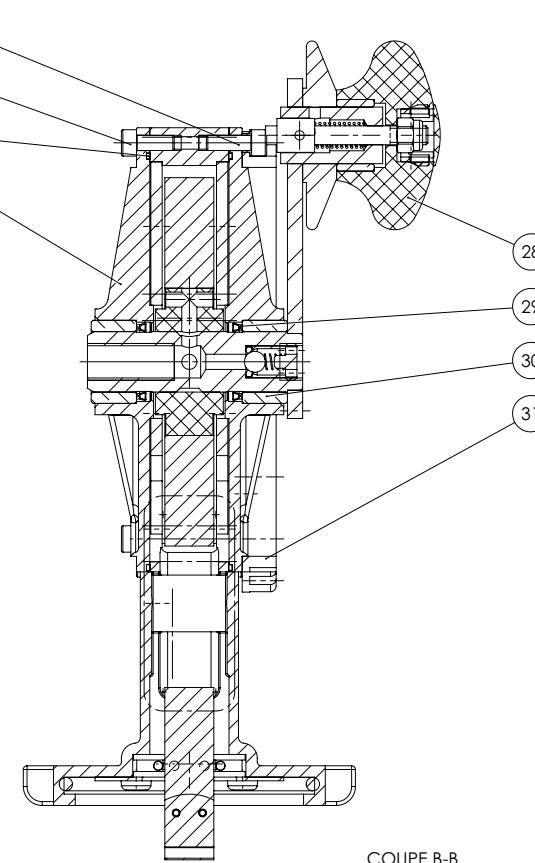
Speciality  
HERMetic DIP 2 GT CHEM

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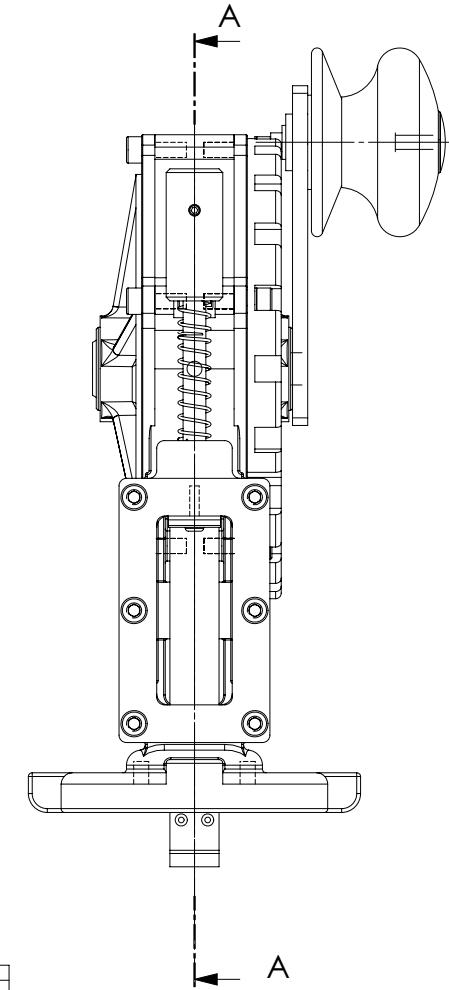
Enraf Tanksystem SA  
RUE DE L'INDUSTRIE 2 CH-1630 BULLE  
Tel. +41 26 91 91 500 - Fax +41 26 91 91 505



COUPE A-A



COUPE B-B



Item	Qty	Weight	Description	Material	TS	ND
1	1	578.8	Carter winder	CF8M	20602	20277
2	1	9.0	Push button	PTFE 25% car	20022	40452
3	2	1.0	Socket set screw M3x5	A2	40865	DIN 913
4	2	0.8	Spring of wiper		1.4310	12611
5	1	18.9	Axle of wiper	AISI 316	20023	40453
6	1	0.1	O-Ring ø0.07x1.78	Viton	20513	
7	1	2.6	Gasket for sight & cover	Caoutchouc	20029	40459
8	1	0.2	Gasket for sight glass	FEP	21036	40985
9	1	0.6	Wiper	PTFE	12097	30700
10	1	2.0	Slotted pan head mach. screw M2.5x8	A2	40705	ISO1580
11	1	41.2	Frame of sightglass		1.4301	20024
12	1	13.2	Sightglass	Verre	20026	40456
13	6	4.0	Socket head cap screw M4x30	A2	40310	DIN 912
14	1	0.4	O-Ring ø44.17x1.78	Viton	20540	
15	1	57.3	Sightglass holder	PVDF	21046	30524
16	1	5.5	Wiper PTFE		10535	30237
17	1	646.1	Tape 30m assy		98144C	41280
18	2	1.0	Slotted pan head mach. screw M4x5	A2	40701	ISO1580
19	1	11.6	Wiper holder	AISI 316	20028	40458
20	1	2.0	O-Ring ø61.91x3.53	Viton	20519	
21	1	27.1	Tape holder	PTFE 25% car	21041	40989
22	1	3.0	Slotted cheese head mach. screw M4x30	A2	40800	ISO1207
23	2	19.9	Washer	PTFE 25% car	20607	41014
24	2	287.5	Cover	CF8M	20603	30539
25	2	1.1	Gasket	PTFE	20604	41012
26	5	2.0	Socket head cap screw M4x10	A2	40302	DIN 912
27	5	2.0	Socket head cap screw M4x12	A2	40303	DIN 912
28	1	214.7	Crank assy FFKM		10313	30544
29	2	0.2	FOI Foseal ring ø16	PTFE 25% car	21059	
30	2	17.6	Bearing 16x22x12	Bronze	21062	
31	1	23.8	Washer		20606	30540

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Speciality	TS 98151A
ND 20366	
REF ND 30704	

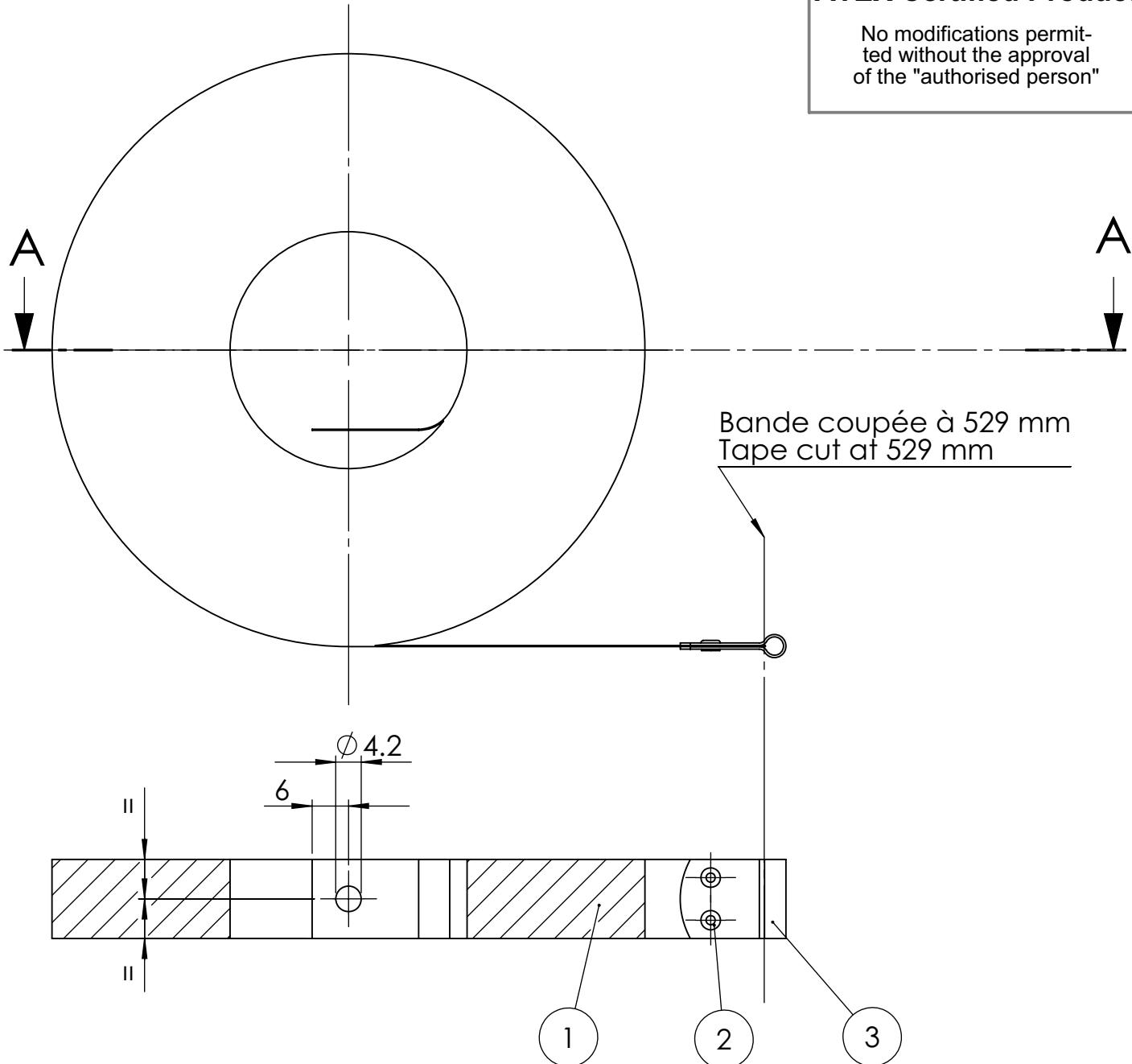
Enraf Tanksystem SA  
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Tel. +41 26 91 91 500 - Fax +41 26 91 91 505

ISSUE 1 : 19.2.2009	
1:1	
MPSA YYYN	
Replacement for:	Replaced by:
ND	ND

Drawn:	CPI 19.02.2009	Control:	
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**ATEX Certified Product**

No modifications permitted without the approval of the "authorised person"



Item	Qty	Weight	Description	Material	TS	ND
1	1	644.1	Tape 30 m Metric/inch	1.4021	19503	
2	2	0.0	Rivet ø 2 x 2.1	A2	-	41367
3	1	1.4	Clasp for swivel hook	1.4305	20555	41363

TOLERANCES UNLESS OTHERWISE SPECIFIED							Weight: 644.9 Eff.	ISSUE 1 : 18.2.2009	
Norm. Size	Over	6	30	100	300	1000			
Fit	To	6	30	100	300	1000			
Fine	±	0,05	0,1	0,15	0,2	0,3	0,5	0,1°	

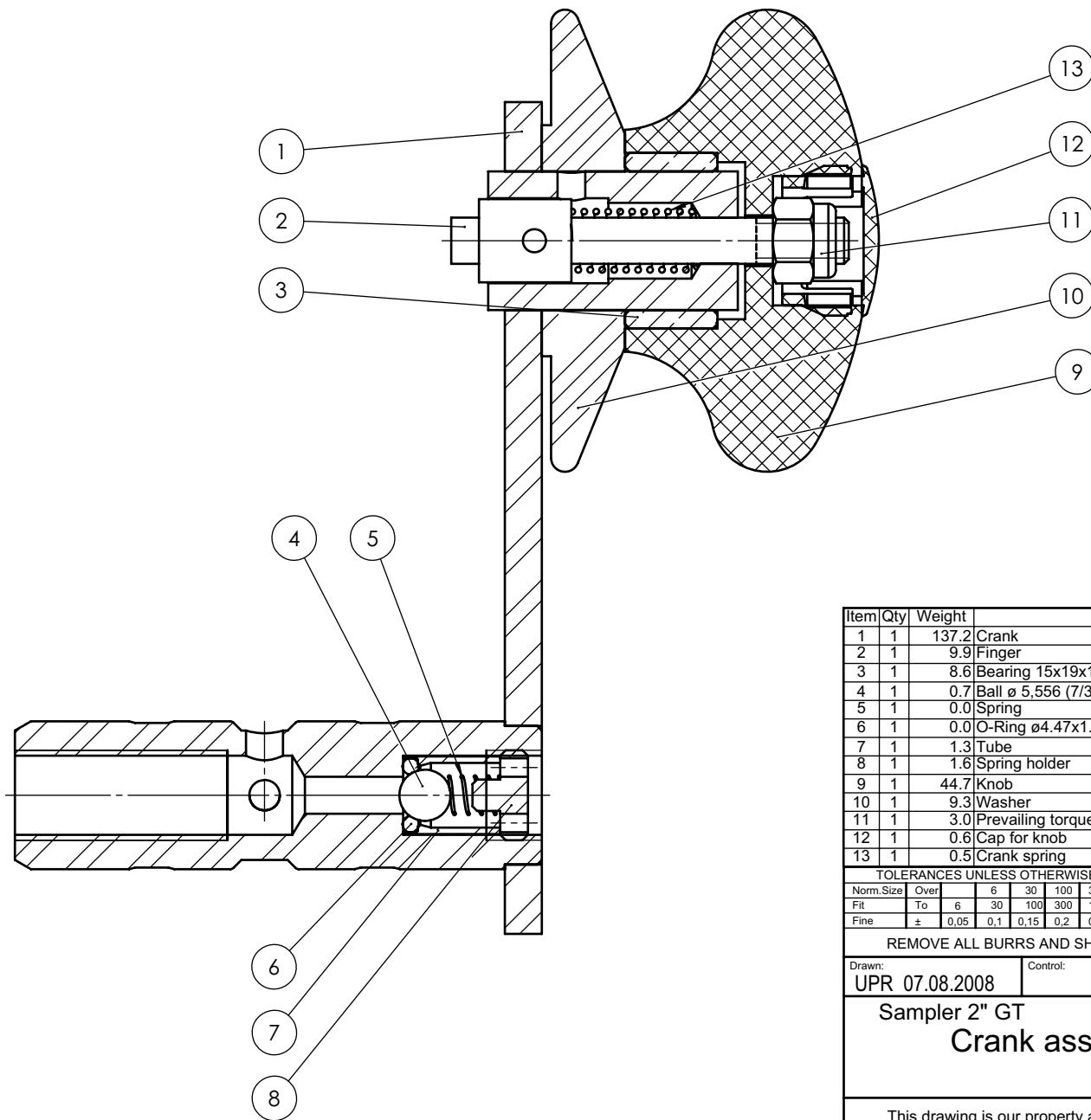
REMOVE ALL BURRS AND SHARP EDGES							1:1	MPSA YYYN	Issue Date: 18.2.2009			
Drawn: CPI 18.02.2009												
Control:												

Speciality  Tape 30m assy							TS 98144C	
							ND 41280	
							REF ND 20353	

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ATEX Certified Product

No modifications permitted without the approval of the "authorised person"



Item	Qty	Weight	Description	Material	TS	ND
1	1	137.2	Crank	1.4401	21034	30521
2	1	9.9	Finger	1.4401	21047	40991
3	1	8.6	Bearing 15x19x10	Bronze	21049	
4	1	0.7	Ball ø 5.556 (7/32")	1.4435	11129	
5	1	0.0	Spring	1.4310	20103	
6	1	0.0	O-Ring ø4.47x1.78	FFPM	21050	
7	1	1.3	Tube	1.4401	20099	40804
8	1	1.6	Spring holder	1.4401	20105	40808
9	1	44.7	Knob	PF 31	21048	40992
10	1	9.3	Washer	PE-HD	11052	40563
11	1	3.0	Prevailing torque hex nut M5	A2	40009	DIN 985
12	1	0.6	Cap for knob	PE-HD	11054	40182
13	1	0.5	Crank spring	1.4310	11500	

TOLERANCES UNLESS OTHERWISE SPECIFIED

Norm.Size	Over	6	30	100	300	1000	Am
Fit	To	6	30	100	300	1000	2000
Fine	±	0.05	0.1	0.15	0.2	0.3	0.5

REMOVE ALL BURRS AND SHARP EDGE

Drawn: **LDR-07-00-0000** Control:

Sampler 2" GT  
Crank assy FFKM

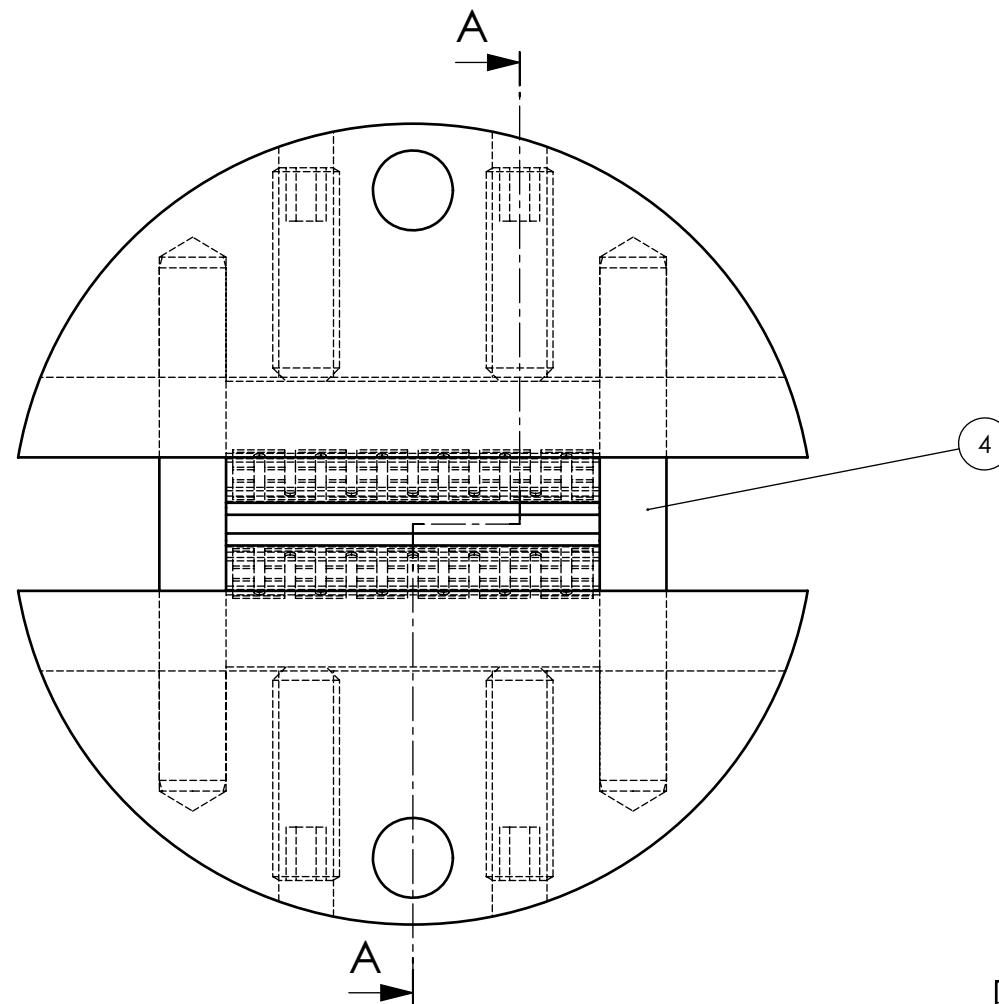
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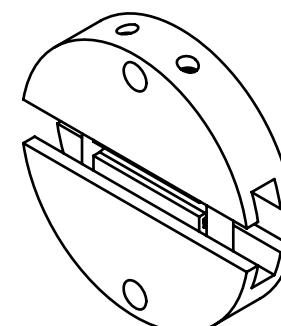
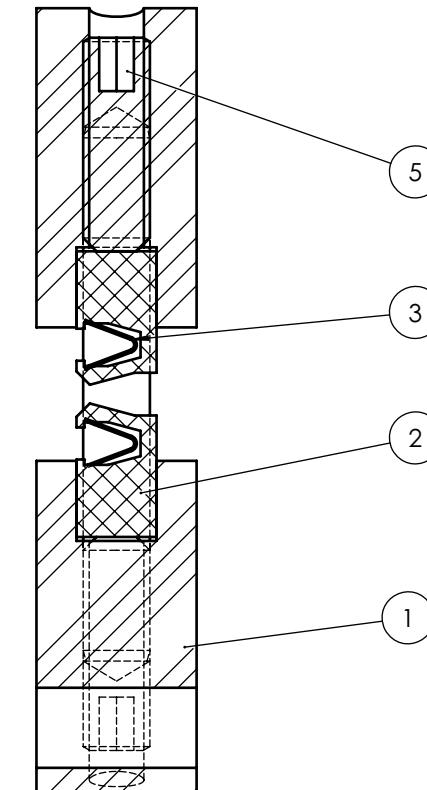
RUE DE L'INDUSTRIE 2 CH-1630 BULLE  
Tel. +41 26 01 01 500 Fax +41 26 01 01 505

**ATEX Certified Product**

No modifications permitted without the approval of the "authorised person"



COUPE A-A



Item	Qty	Weight	Description	Material	TS	ND
1	2	2.3	Wiper holder	PVDF	12043	30236
2	2	0.3	Wiper	PTFE 25% car	12041	40424
3	2	0.0	Spring for wiper PTFE		1.4310	12042
4	2	0.0	Rod 2.5x20		A2	40211 DIN 7
5	4	0.0	Socket set screw M2.5x8		A4	40858 DIN 913

TOLERANCES UNLESS OTHERWISE SPECIFIED							Weight:	ISSUE 1 : 8.8.2007			
Norm.	Size	Over	To	6	30	100	300	1000	Angles		
Fit				±	0.05	0.1	0.15	0.2	0.3	0.5	0,1°

REMOVE ALL BURRS AND SHARP EDGES	5:1	MPSA 1000	
Drawn: UPR 08.08.2007			
Control: ND			

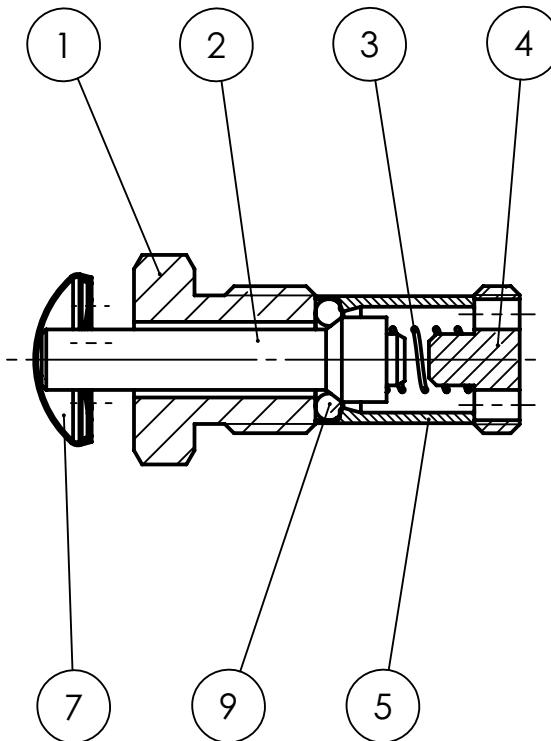
Sampler 2" GT	TS 10535
Wiper PTFE	ND 30237
	REF ND 20137/20152/20178

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Item	Qty	Weight	Description	Material	TS	ND
1	1	6.5	Relief valve seat	1.4401	20101	40806
2	1	2.7	Valve rod	AISI 316	21035	40984
3	1	0.0	Spring	1.4310	20103	
4	1	1.6	Spring holder	1.4401	20105	40808
5	1	1.3	Tube	1.4401	20099	40804
9	1	0.0	O-Ring ø4.47x1.78	FFPM	21050	
7	1	0.4	Starlock ø4	1.4310	40910	
8	1	6.0	Sachet PEBD 90x75		50335	

TOLERANCES UNLESS OTHERWISE SPECIFIED

Norm.	Size	Over	6	30	100	300	1000	Angles	Weight:	ISSUE	1 : 12.8.2008
Fit	To	6	30	100	300	1000	2000		12.5 Eff.		
Fine	±	0,05	0,1	0,15	0,2	0,3	0,5	0,1°			

REMOVE ALL BURRS AND SHARP EDGES

Drawn: UPR 12.08.2008	Control:	2:1	MPSA YYYN	Replacement for: ND	Replaced by: ND

Sampler 2" GT

Kit inlet valve FFKM

TS 20613

ND 41023

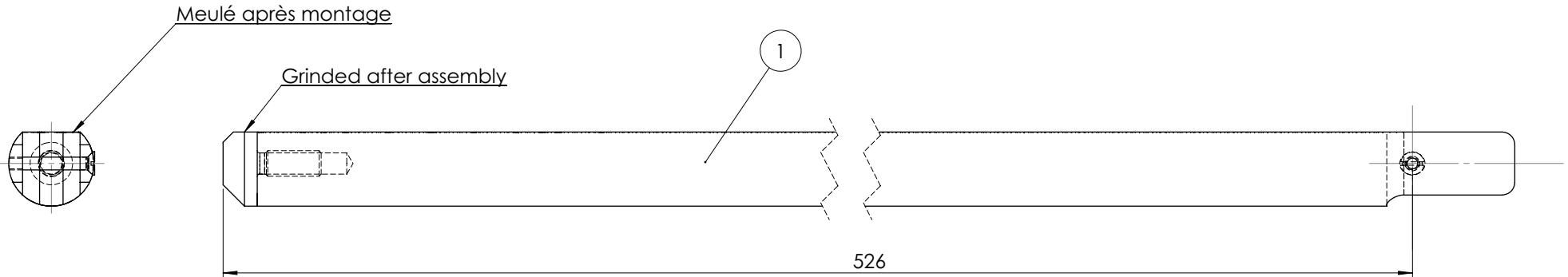
REF ND 20190

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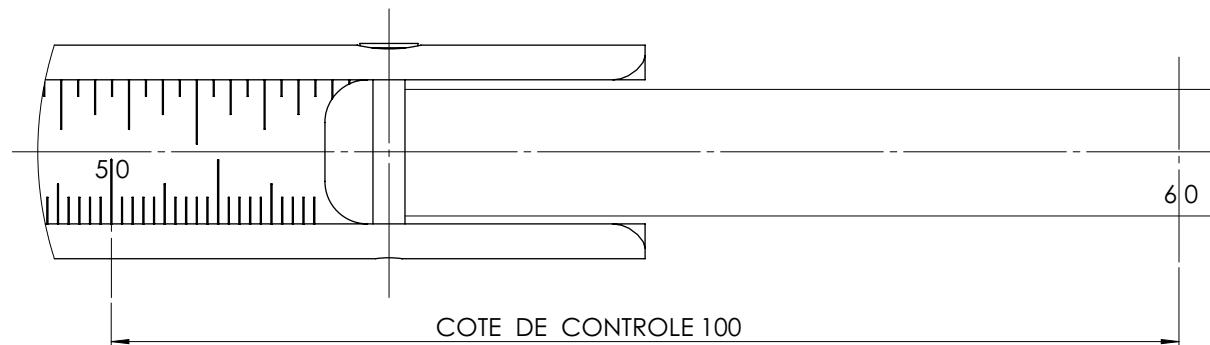
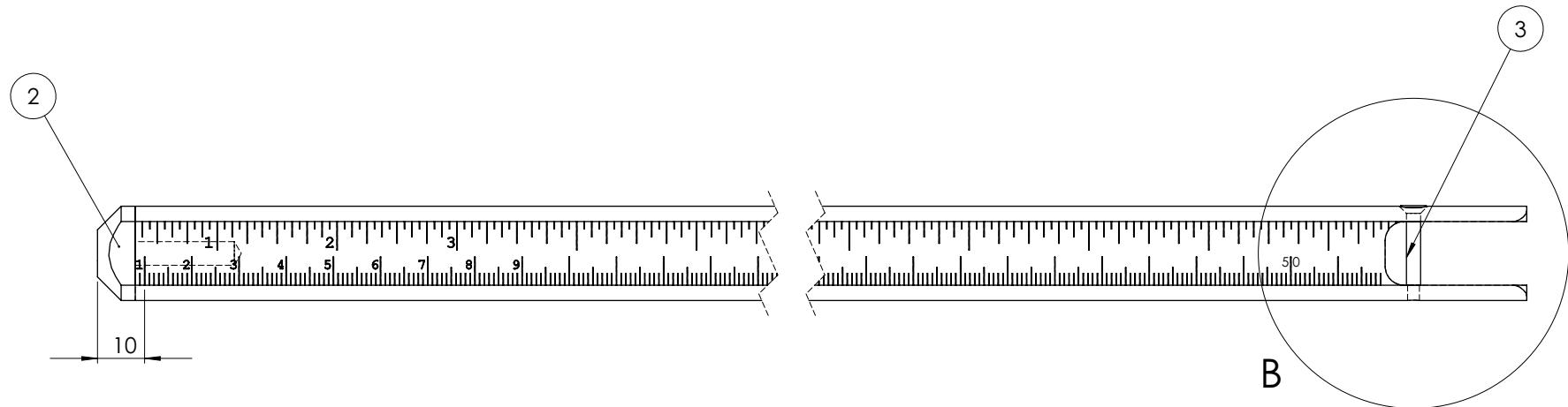
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526



DÉTAIL B  
ECHELLE 2 : 1

Item	Qty	Weight	Description	Material	TS	ND				
1	1	1177.5	Dipping rod	1.4305	19002	30483				
2	1	4.0	Dipping head	PVDF	19004	40512				
3	1	2	Slotted flat head screw M3 x 20	A2	40619	DIN963A				
<b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b>										
Norm.	Size	Over	6	30	100	300				
Fit		To	6	30	300	1000				
Fine		±	0.05	0.1	0.15	0.2				
				1000	2000	Angles				
						0,1°				
<b>REMOVE ALL BURRS AND SHARP EDGES</b>										
Drawn:	UPR 01.09.2008	Control:								
<b>HERMetic Dip 2</b>										
<b>Dipping rod assy</b>										
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<b>Enraf Tanksystem SA</b>										
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ISSUE 2 : 14.02.2008

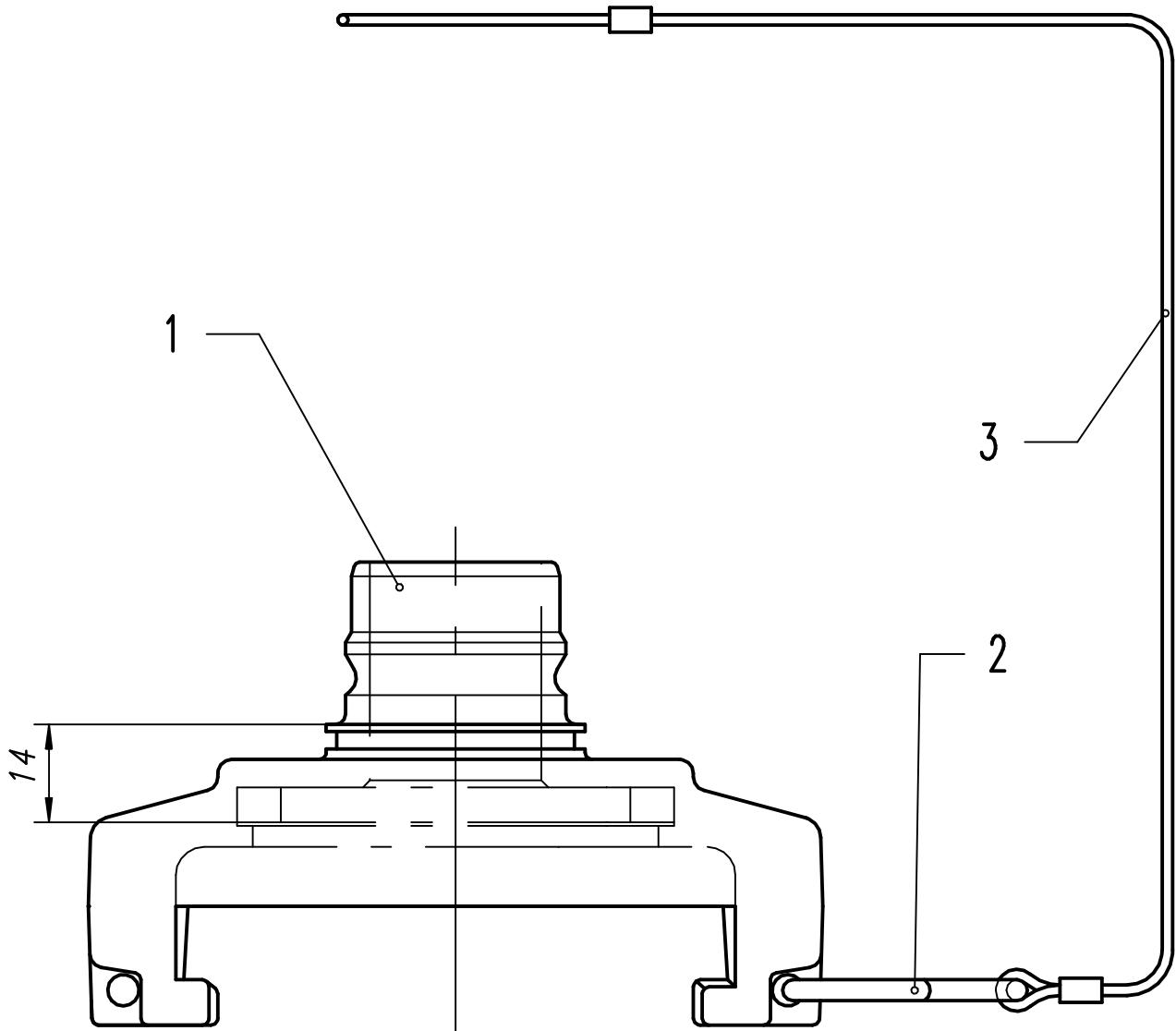
1:1 MPSA 1000



TS 19506

ND 30419

REF ND 20194720195/20198



Item	Qt	Weight	Description	Material	TS #	ND #
1	1	400	Connector 1" - 2" FKM	-	22563	41032
2	1	5	S Holder	AISI 304	11902	40537
3	1	4	Cable assy	-	55112	40525

TOLERANCES UNLESS OTHERWISE SPECIFIED

Norm. Size	Over	6	30	100	300	1000	Angles
Fit	To	6	30	100	300	1000	2000
Fine	±	0,05	0,1	0,15	0,2	0,3	0,5

REMOVE ALL BURRS AND SHARP EDGES

Drawn:  
UPR 14.03.1997

Weight:  
409 Th.  
0 Eff.

ISSUE 1 : 14.3.1997

1 : 1

MPSA  
4110



Replacement for:  
ND

Replaced by:  
ND

TS 22564

ND 41039

REF ND

Valves  
Adaptor 1"-2"

Is Date Visa Modification

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