



EU DECLARATION OF CONFORMITY

Issued in accordance with the PRESSURE EQUIPMENT DIRECTIVE (PED) 2014/68/EU

We hereby declare that the product(s) listed below have been designed, manufactured and tested in accordance with the above mentioned directive

Notified Body/Approval No.: Det Norske Veritas 0496, Conformity assessment module: B(production type) + D, Equipment category: IV

Certificate numbers: 124186-2012-CE-SWE-ACCREDIA and 124197-2012-CE-SWE-ACCREDIA Applicable standards: EN 14359:2006 +A1

Product Description: Hydro Pneumatic Piston Accumulator				Year and Week of Manufacture: 1907			Certificate Number: 15502				
Maximum Working Pressure (P _s):		250 bar					Burst Disc burst pressure (if fitted):		bar		
Fluid Proof Pressure Test (p _f):		373 bar					Burst Disc burst temperature (if fitted):		°C		
Design Temperature Range T _{min} - T _{max} (t _s):		-20 to +80 °C									
Material Traceability Record with Individual Certificate Nos.											
Accumulator Model	Category Class I-IV	Serial Number	General Arrangement Drawing Number	Rev No.	Internal volume of gas chamber (L)	Cert. No. Tube	Cert. No. End Cap Fluid Side	Cert. No. End Cap Gas Side	Cert. No. Piston (if requested)	Burst Disc batch No. (if fitted)	Note: Pre charged
PAC-250-200-020-AU-AL-02-01-01-Y	IV	90983	6810046	2	20	VH15460	VH16368	VH16368			0bar
											bar
											bar
											bar
											bar

This certificate also fulfils the requirements of EN 10204.2.1 Certificate of Compliance if the following have been filled out:

Customer: Servi AS	General: Unless nothing else is stated, the following applies: Regarding fatigue: Dp=0,25*P _s for 10 ⁶ Cycles and Dp=P _s for 20000 cycles
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Customer Order No	B451065	PMC Cylinders AB Order No	803593	The Unit(s) have been Tested and Inspected (no deformation or leakage) and found to comply with above specification
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Date: 2019-02-19

PMC Cylinders AB Frideborgsvägen 21, Box 20, SE-567 21 Vaggeryd, SWEDEN Telephone: + 46 393 365 00 Fax: + 46 393 365 19 E-mail: info@pmccylinders.se Web: www.pmccylinders.se	For and on behalf of PMC Cylinders AB Mikael Bryntesson
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See Name plate, Warning sign and User Manual for proper installation, use and maintenance of the accumulator.



Dalmine SPA - Arcore Plant
Via Achille Grandi, 100
20862 Arcore (MB) - Italy
+ 39 039 66 50 1 tel
+ 39 039 6013 539 fax

Doc.no: VH 15460

INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **04/15/06296**
Page / Pagina: **1 / 5**
Date / Data: **September 01, 2015**

Customer / Cliente: PMC CYLINDERS AB	Customer's Order Item / Rider: 1028679	Customer's Reference / Posizione Cliente: 4263821001	Manufacturer's Works Order N° / Conferma-Posizione: 4263821001
Manufacture Process / Processo di fabbricazione: STRESS RELIEVING	Product Type / Tipo di prodotto: SEAMLESS COLD FINISHED PIPES FOR MECHANICAL APPLICATION	Surface / Superficie: OILED WITH PT 7/1	
Standard or Specification / Nome o specifica: TRATTAMENTO TERMICO DI DISTENSIONE	Steel Grade / Grado dell'Acciaio: TUBI S.S. DI QUALITA' FINITI A FREDDO PER APPLICAZIONI MECCANICHE	Ends / Estremità: OLEATI CON PT 7/1	
Standard: ACCORDING TO EN 10305-1 + SPEC. PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1	Length / Lunghezza: 19.685 ft + 26.247 ft	Plain End (Square Cut) / Lisci alle estremità: PLAIN END (SQUARE CUT)	
Standard: NORMA EN 10305-1 + SPECIFICA PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1	Schedule / Scheda: 8000 mm + 8000 mm	Normal Weight / Peso nominale: 49.69 lb/ft	
Dimensions / Dimensioni: ø 8.976" O.D., ø 7.874" I.D., 200Ld, 2280od, 14wt in mm	Quantity / Quantità: 24Pcs/Pz	Weight / Peso: 25209,8 lb	
		Net Weight / Peso netto: 11435 kg	

DELIVERY NOTES / AWISI DI SPEDIZIONE

Job number: 003121752 / 000020	Delivery Notes / Avvisi di spedizione: Delivery Notes
Shipping note: 97953930 - 01/09/2015	Avvisi di spedizione: Avvisi di spedizione
Address: BOX 20	Town: 56721 Vaggebyrd
	Country: Sweden

TENSILE TEST / PROVA DI TRAZIONE

Heat N° / Colata N°	Sample N° / Prova N°	Specimen condition / Condizioni della provetta	Specimen dimensions / Dimensioni della provetta	Test Temp / Temp di prova	Y.S. / U.T.S. Req.	Elongation / Allungamento			
						Lo	Min. / Max.	Min. / Max.	Obl. / %
951250	W9497	B SR Ss L	19.80 x 14.19	+20	612	5D	95.0	14.0%	20.5%
951345	W9498	B SR Ss L	19.82 x 14.18	+20	614	5D	95.0	14.0%	20.0%

B: Body / Corpo
L: Longitudinal / Lunghezza iniziale
Lo: Initial length / Lunghezza iniziale
Ls: Location of sample / Ubicazione provetta

Max: Maximum / Massimo
Min: Minimum / Minimo
Obt: Obtained / Ottenuto
Or: Orientation / Orientamento

Req: Required / Richiesto
Sc: Specimen condition / Condizioni Provetta
SR: Stress relief / Distensione
Ss: Strip specimen / Rettangolare

U.T.S. Ultimate Tensile Strength / Rottura
Y.S. Yield Strength / Snervamento

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trademark green colored "T" remains stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unavailability or not allowed use. Any alteration and/or fabrication will be subjected to the law.

FOR03171

1028679
3500236 c1
OK 150918 MB



Tenaris

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INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **04/15/06296**
Page / Pagina: **2 / 5**

Date / Data: **September 01, 2015**

Customer / Cliente: PMC CYLINDERS AB	Customer's Order Item / Ritiro, Ordine Cliente - Item / Posizione Cliente: 1028679	Manufacturer's Works Order N° / Conferma-Posizione: 4263621001
Manufacture Process / Processo di fabbricazione: STRESS RELIEVING	Product Type / Tipo di prodotto: SEAMLESS COLD FINISHED PIPES FOR MECHANICAL APPLICATION	Surface / Superficie: OILED WITH PT 711
Standard or Specification / Norme o specifiche: TRATTAMENTO TERMICO DI DISTENSIONE	Steel Grade / Grado dell'Acciaio: TUBI S.S. DI QUALITÀ FINITI A FREDDO PER APPLICAZIONI MECCANICHE	Ends / Estremità: OLEATI CON PT 711
Standard or Specification / Norme o specifiche: ACCORDING TO EN 10305-1 + SPEC. PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1	Steel Grade / Grado dell'Acciaio: STEEL E 355	Ends / Estremità: PLAIN END (SQUARE CUT)
Standard or Specification / Norme o specifiche: NORMA EN 10305-1 + SPECIFICA PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1	Quantity / Quantità: 25209,8 lb	Ends / Estremità: LISCIALE ESTREMITÀ
Dimensions / Dimensioni: Ø 8.976" O.D., Ø 7.874" I.D., 200lid, 2280od, 14wt in mm	Length / Lunghezza: 19.685 ft + 26.247 ft	Nominal Weight / Peso nominale: 49.89 lb/ft
	6000 mm + 8000 mm	73.95 Kg/m

TENSILE TEST / PROVA DI TRAZIONE

Heat N° Colata N°	Sample N° Prova N°	Specimen condition Condizioni della provetta		Test Temp. di prova	Y.S. 0.2% MPa	U.T.S. Req. MPa
		Ls	Sc			
951250	W9497	B	SR	10.05	79.30	698
		L		10.05	79.30	693

B: Body / Corpo
Cs: Cylindrical specimen / Cilindrica
L: Longitudinal / Longitudinale

La: Location of sample / Ubicazione provetta
Max: Maximum / Massimo
Min: Minimum / Minimo

Or: Orientation / Orientamento
Req: Required / Richiesto
Sc: Specimen condition / Condizioni Provetta

SR: Stress relief / Distensione
U.T.S: Ultimate Tensile Strength / Rottura
Y.S: Yield Strength / Snervamento

CHEMICAL COMPOSITION / COMPOSIZIONE CHIMICA

Heat N° Colata N°	Composition % / Composizione %									
	C	Si	Mn	P	S	Al	Ti	Nb	V	N
H Max	22	160	66	25	25	20	20	20	20	20
H Min	19	152	24	11	11	11	11	11	11	11
P Max	19	152	24	14	14	11	11	11	11	11
P Min	19	152	20	13	10	10	10	10	10	10
H	19	152	20	13	10	10	10	10	10	10

H: Heat / Colata
Max: Maximum / Massimo
Min: Minimum / Minimo

P: Product / Prodotto

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INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)		Number / Numero: 04/15/06296	Page / Pagina: 4 / 5
Customer / Cliente: PMC CYLINDERS AB 1028679		Date / Data: September 01, 2015	
Manufacturer's Process / Processo di fabbricazione: STRESS RELIEVING		Manufacturer's Works Order N° / Conferma-Posizione: 4263821/001	
Product Type / Tipo di prodotto: SEAMLESS COLD FINISHED PIPES FOR MECHANICAL APPLICATION		Surface / Superficie: OILED WITH PT 7/1	
Standard or Specification / Norme o specifiche: TUBI S.S. DI QUALITA' FINITI A FREDDO PER APPLICAZIONI MECCANICHE		Ends / Estremita' OLEATI CON PT 7/1	
ACCORDING TO EN 10305-1 + SPEC. PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1		PLAIN END (SQUARE CUT)	
NORMA EN 10305-1 + SPECIFICA PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1		LISCIALLE ESTREMITA'	
Schedule / Scheda:		Nominal Weight / Peso nominale	
Dimensions / Dimensioni: ø 8.976" O.D., ø 7.874" I.D.		49.69 lb/ft	
Length / Lunghezza 19.685 ft + 26.247 ft		73.95 Kg/m	
6000 mm + 8000 mm			

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARI

Supplementary Information Informazioni supplementari	
<p>AFTER INSPECTION OPERATION, THE MATERIAL HAS NOT A RESIDUAL MAGNETISM GREATER THAN 15 GAUSS</p> <p>EDDY CURRENT HAS BEEN PERFORMED ON FULL LENGTH WITH POSITIVE RESULT (ACCORDING TO EN 10246/3)</p> <p>VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT</p> <p>STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE TO A FINE GRAIN PRACTICE</p> <p>THE PRODUCT SUPPLIED IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER.</p> <p>MANUFACTURED BY TENARIS DALMINE</p> <p>NO WELD REPAIR, MERCURY AND RADIATION FREE</p> <p>WE HEREBY DECLARE THAT ALL PIPES HAVE BEEN SPECTROSCOPICALLY CHECKED, NO DISCREPANCY HAS BEEN FOUND.</p> <p>Tenaris IT identification number for MTC: 57*627*2</p>	<p>DOPO LE OPERAZIONI DI CONTROLLO, IL MATERIALE NON PRESENTA UN MAGNETISMO RESIDUO SUPERIORE A 15 GAUSS</p> <p>IL CONTROLLO EDDY CURRENT SU TUTTA LA LUNGHEZZA HA DATO ESITO POSITIVO (SECONDO EN 10246/3)</p> <p>IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE</p> <p>L'ACCIAIO E' DI TIPO CALMATO, A GRAFIO FINE, PRODOTTO AL FORNO ELETTRICO</p> <p>IL MATERIALE FORNITO E' IN ACCORDO AI REQUISITI DELL'ORDINE.</p> <p>FABBRICATO DA TENARIS DALMINE</p> <p>NON RIPARATO MEDIANTE SALDATURA, ESENTE DA MERCURIO E RADIAZIONI</p> <p>SI DICHIARA CHE TUTTI I TUBI SONO STATI SOTTOPOSTI AL CONTROLLO DELL'ACCIAIO MEDIANTE SPETTRONALIZZAZIONE, DALL'ESAME NON SONO EMERSE MESCOLANZE DI MATERIALE.</p> <p>Numero identificativo Tenaris IT per MTC: 57*627*2</p>



MARKING / MARCATURA

<p>STENCILING</p> <p>_T EN 10305-1 E355 +SR 228 x200 x14 HEAT _C OLATA -4263821/001 -</p> <p>LEGENDA</p>	<p>Marking Marcatura</p> <p>VERNICIATURA</p> <p>_T EN 10305-1 E355 +SR 228 x200 x14 HEAT _C OLATA -4263821/001 -</p> <p>LEGENDA</p>
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Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale riporta il marchio "Tenaris" in colore verde. Il possessore dell'originale qualora rilasciasse una copia di esso, deve attestare la sua conformità all'originale, assumendone ogni responsabilità per usi illeciti o non consentiti. Qualunque alterazione o falsificazione sarà punita a norma di legge.



INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)		Number / Numero: 04/15/06296	Page / Pagina: 5 / 5
Customer / Cliente: PMC CYLINDERS AB		Date / Data: September 01, 2015	
Customer's Order Item / Rifer. Ordine Cliente - Item 1028679		Customer's Reference / Posizione Cliente:	
Manufacture Process / Processo di fabbricazione STRESS RELIEVING TRATTAMENTO TERMICO DI DISTENSIONE	Product Type / Tipo di prodotto SEAMLESS COLD FINISHED PIPES FOR MECHANICAL APPLICATION TUBI S.S. DI QUALITA' FINITI A FREDDO PER APPLICAZIONI MECCANICHE	Manufacturer's Works Order N° / Conferma-Posizione: 4253821/001	
Standard or Specification / Norme o specifiche: ACCORDING TO EN 10305-1 + SPEC. PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1 NORMA EN 10305-1 + SPECIFICA PMC-MA 001 REV. QUALIFICATION + TQ 20029359 REV. 1.1	Sheet Grade / Grado dell'Acciaio STEEL E 355 ACCIAIO E 355	Surface / Superficie OILED WITH PT 7/1 OLEATI CON PT 7/1	
Dimensions / Dimensioni ø 8.976" O.D., ø 7.874" I.D. 200Id, 228od, 14wt in mm	Quantity / Quantità 24Pcs/Pz	Ends / Estremità: PLAIN END (SQUARE CUT) LUSCI ALLE ESTREMITA'	
	Length / Lunghezza 19.685 ft + 26.247 ft 6000 mm + 8000 mm	Nominal Weight / Peso nominale: 49.69 lb/ft 73.95 Kg/m	
MARKING / MARCATURA			
Marking Marcatura			
T = TENARIS Logo			
<p>This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.</p> <p>Si certifica che il prodotto descritto è stato prodotto, provato, testato e controllato in conformità ai requisiti dell'ordine del cliente. Questo certificato non è una dichiarazione d'origine e non può essere usato come tale.</p>			
CUSTOMER THIRD PARTY		TENARIS QUALITY DEPARTMENT SIGNATURE	
INSPECTION COMPANY COMPAGNIA D'ISPEZIONE		CHIEF OF QUALITY CERTIFICATION DEPT RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITA' MASTRANDREA ROCCO	
 Sigah Elbe QUALITY CERTIFICATION DEPT UFFICIO CERTIFICAZIONE QUALITA' SIGOLI GIAMBICA		 Mastroandrea Rocco CHIEF OF QUALITY CERTIFICATION DEPT RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITA' MASTRANDREA ROCCO	

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QMS Certified

Contract No.: 20001
TECHN.PROTOCOL № 318-08 SPEC.№ 8488/7111599 Lot 2
DIN EN 10025-2

DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, ZAPOROZHYE 69008, UKRAINE

Sheets:3 Sheet:2
INSPECTION CERTIFICATE Nr.332250
PLANT ORDER № 8059508488

EN10204/3.1

CUSTOMER
„DSS INTERNATIONAL SA“
Switzerland

PRODUCT DESCRIPTION
Bars and rods of carbon steel hot rolled peeled
Прутки из углеродистых сталей, горячекатаные, обточенные
STEEL MAKING PROCESS: Electric furnace melt, Vacuum degassed.
СПОСОБ ВЫПЛАВКИ: Электрическая дуговая печь с вакумированием
Round 220mm L=5,670m; L=5,560m; L=5,640m; L=5,480m; L=5,610m; L=5,680m;
Grade: S355J2+N (1.0577+N)

QUANTITY:
(number of pcs) 1 bund Q-1704 kg 1 bund Q-1638 kg
1 bund Q-1684 kg 1 bund Q-1698 kg
1 bund Q-1690 kg 1 bund Q-1720 kg

Delivery condition
Normaliz.
нормализованные

ANALYSIS, %	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	Cu	V	W	Al	Ca	Nb
REQUIRED	.17- .22	.25- .40	1.20- 1.60	<.025	.020- .030	<.30	<.30	<.08	<.03	<.30	<.05	<.10	.02- .06	>.002	<.02
HEAT № B42565	.19	.30	1.26	.014	.026	.20	.16	.03	.002	.17	.01	.02	.028	.0032	.01

t.26a

MECHANICAL PROPERTIES	Yield Strength, Re(R _{0.2}) N/mm ²	Tensile Strength, Rm N/mm ²	Elongation A ₅ , %	Reduction of area, Z%	Impact strength, KV, J -20°
REQUIRED	275	450-600	17		27
EFFECTIVE	375	550	31	115 115 115	115 115 115

TECHNICAL REQUIREMENTS:

CEV=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15=0.470
Macrostructure -GOOD
Grain Size : 7 to ASTM E 112
Nonmetallic inclusions DIN 50602-K4
Subtotal : S=0 O=0
General index K4 S=0 O=0
Total general index K4=0
„Dimension-surface defects test, anti-mixing test – O.K.
Ratio of reduction- 9.9:1
Bar magnetization < 8 A/cm
„We acknowledge that the delivered products conform to the requirements of the order“

Mechanical properties tested in state of delivery

US - testing yes Results: EN 10308 type 1a; class 2: O.K.

Radiation free; mercury free. No Weld or Weld repair.

Manufacturer: PJSC DNIPROSPETSSTAL
Date: 04.04.18 Manager of quality assurance department
Signed: _____

V. Kapaieva
Zaporozhye
Made in Ukraine.

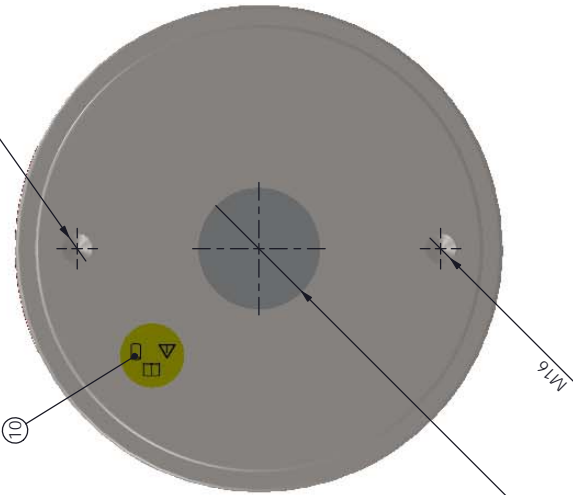
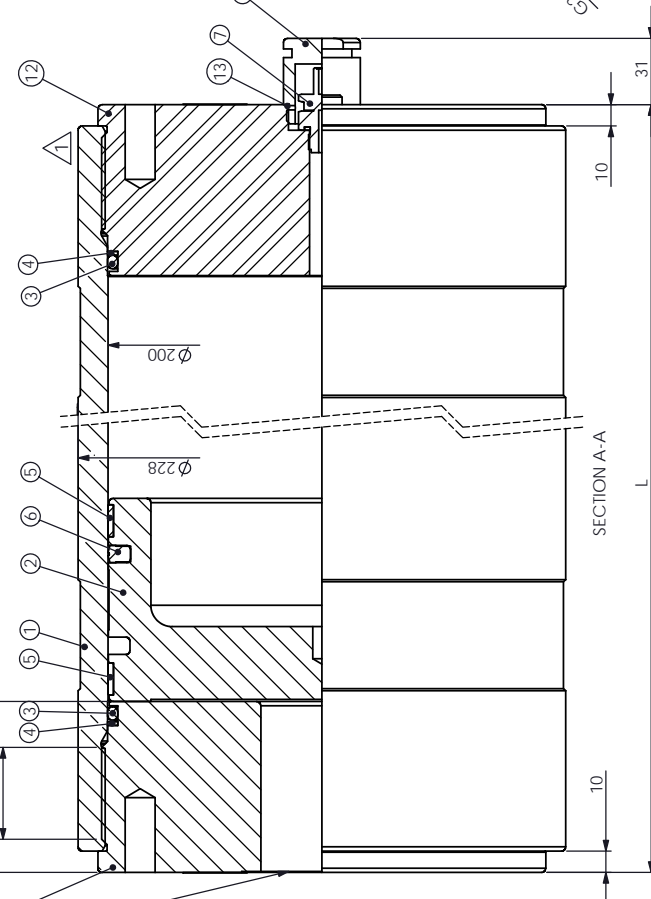
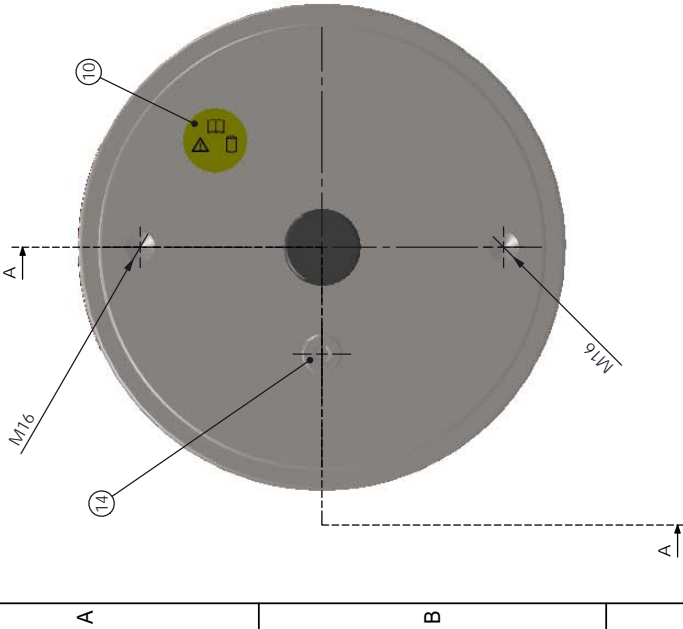
[Signature]

16368

02180619 M...

A3	1	2	3	4	5	6
	Rev	Change	CM-NO	DATE	SIGN	
	1	Grooves in tube end removed	3880	2015-06-01	HaBe	
	2	Text changed, reference to new PED	3939	2016-08-09	HaBe	

Protected with plastic plug after assembly and testing. Use steelplug when painting.



DETAIL B
SCALE 1 : 5

Placeras på gassida, 10mm ifrån läggesspår

Marking CE: (Text height 5, approx 50 from tube end at gas side)
 CE 0496
 PAC-250-200-xxxx S/N: xxxxxx
 PS 250 Bar PT 373 Bar TS -20/+80 °C
 YVWV Sign VHxxxxx

Test pressure (PT) 373 Bar
Max working pressure (PS) 250 Bar
Volume range (V) up to 130 litres
Design temperature (TS) -20/+80 °C
Painting: BH172 Single layer paint.

CE-marked complies with group 2, category IV and module B (prod. type) + D acc. to PED 2014/68/EU, design code EN 14359:2006+A1

Volume V (litres)	Length L (mm)	Weight W (kg)
10	532	79
15	691.5	90
20	851	102
25	1010	114
30	1169	126
40	1487	149
50	1805	173
60	2124	197
70	2442	220
80	2760.5	244
90	3079	267
100	3397	291
110	3715	315
120	4034	338

General tolerance measure EN ISO 2768-1 m	General grade of surface finish 3.2	Heat treatment	Surface Coating
Sharp edges broken	Checked RISV	Date 140429	Scale 1:2.5
Drawn PIWI	Article No. 6810046-XXXX	Product	Weight 173.1
Servi	Drawing No. 6810046	Projection angle	Sheet 1/1
Pmccylinders		Revision	
PAC-250-200-xxx		1/1	
Piston accumulator			

This drawing is a Pmccylinders AB property. Unauthorized use and exposure to third party is forbidden and will be prosecuted by law.