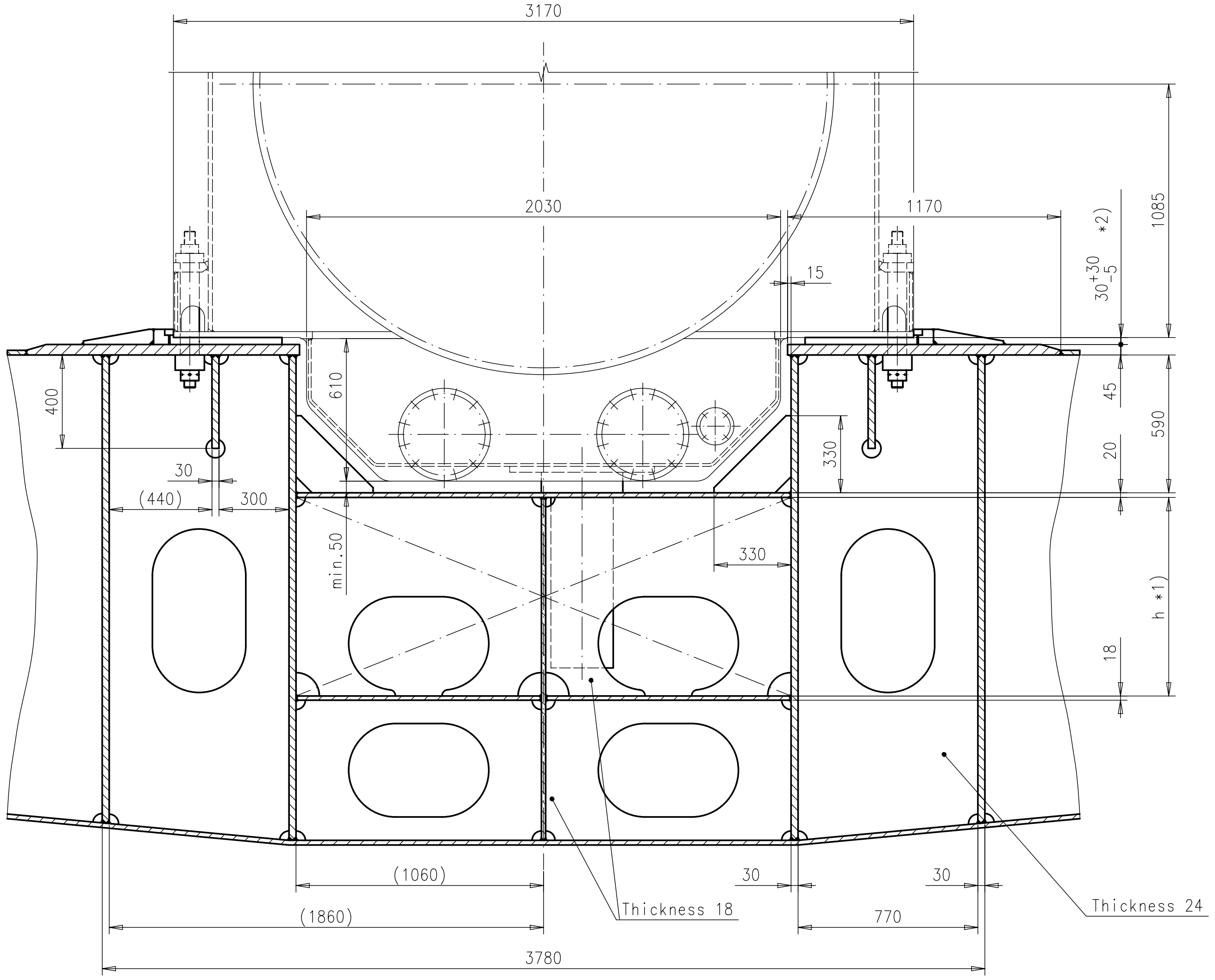
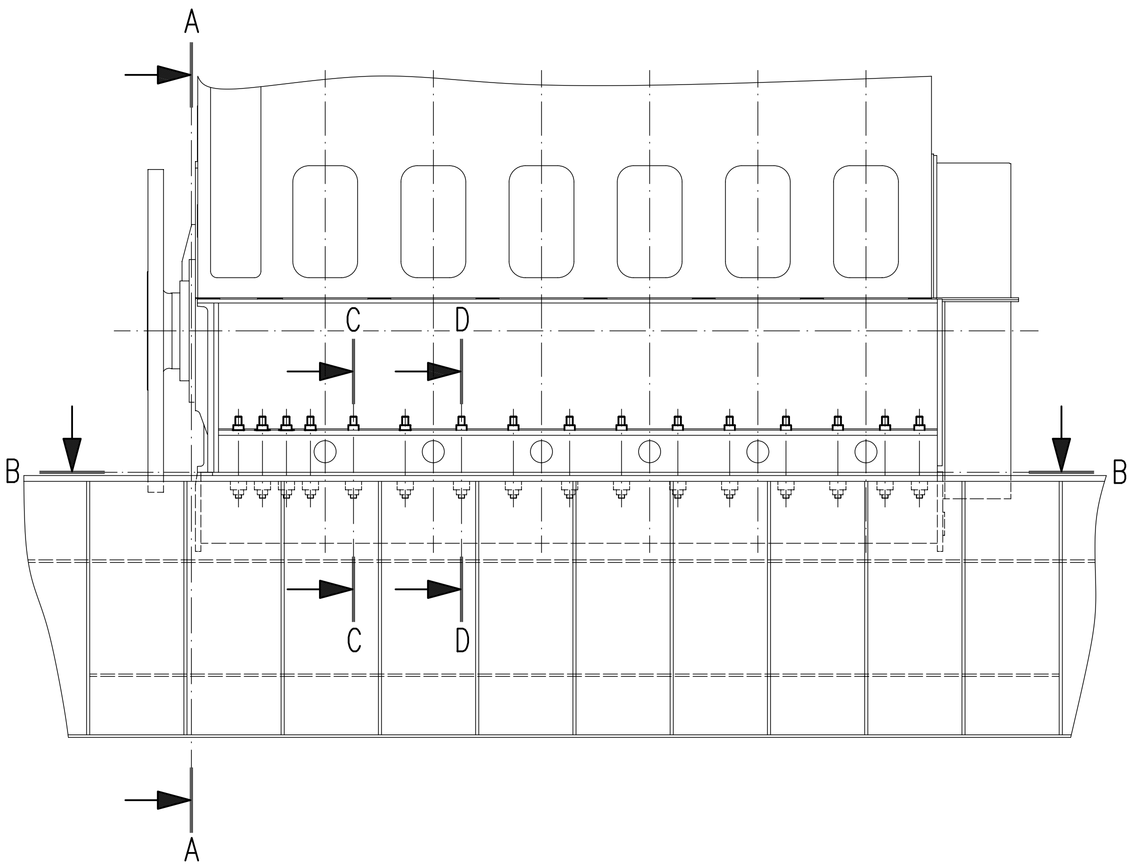
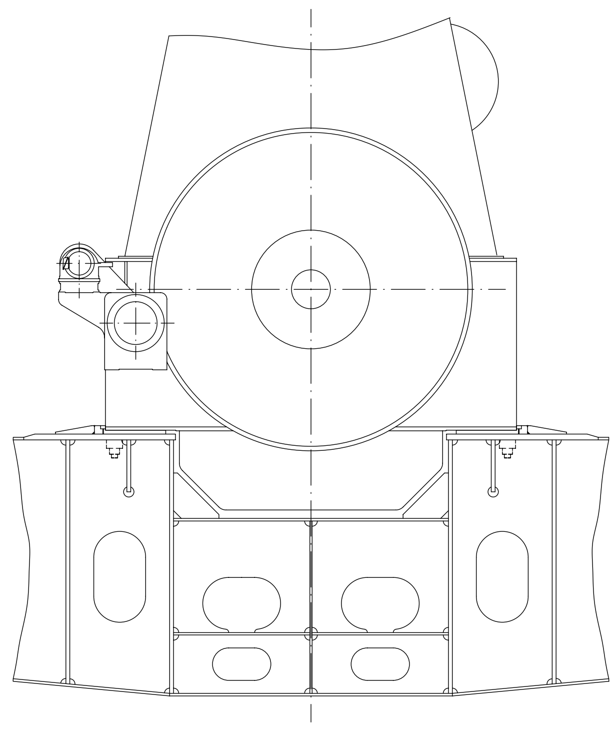
A-A (1:14)







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness 30± 30/5.
- Final chock thickness to be determined by shipyard.

107.420.687.200	5 Cyl	Execution with side stoppers welded type
107.420.687.201	5 Cyl	Execution with side stoppers flame-cut type

Net Weight 768	Net Weight 707	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
1	1	014	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001
3	-	013	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4
-	3	012	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45
18	18	011	107.423.297.001	PIN		107.423.297		0.001
10	10	010	PAAD004345	JOINT DISC		DAAD005525	Rubber750	0.01
1	1	009	107.367.119.001	SEALING PIECE		107.367.119		0.001
28	28	008	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4	1.2
18	18	007	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1
10	10	006	107.422.173.001	CONICAL SOCKET		107.422.173	34CrMo4 SCM 435	7.4
18	18	005	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3
10	10	004	107.422.170.001	ELASTIC BOLT		107.422.170	34CrMo4 SCM 435	7.8
10	10	003	107.422.172.001	SLEEVE		107.422.172	34CrMo4 SCM 435	13.8
28	28	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001
Quantity PER ENGINE								

Material ID: 107.420.687.201 / 107.420.687.200

Free space for lic.

Q-Code XXXXX | Main Drw. H | Standard ISO JIS

Modif.	Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date
A	EAAD082040	23.06.2010									

WÄRTSILÄ

Product: 5RT-flex48T-D, 5RTA48, 5RTA48T, 5RTA48T-B, 5RTA48T-D

ENGINE SEATING/FOUNDATION
THRUST SLEEVES

Units mm kg	IDE		Basic Material	Net Weight
Made	21.05.2010 jba029 Baumann	Scale 1:10	Size A1	Page 1/3	Material ID
Chkd		Design Group 9710	Drawing ID 107.420.687	Rev. A
Appd	16.07.2010			

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Approved
ASD - ASSEMBLY DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

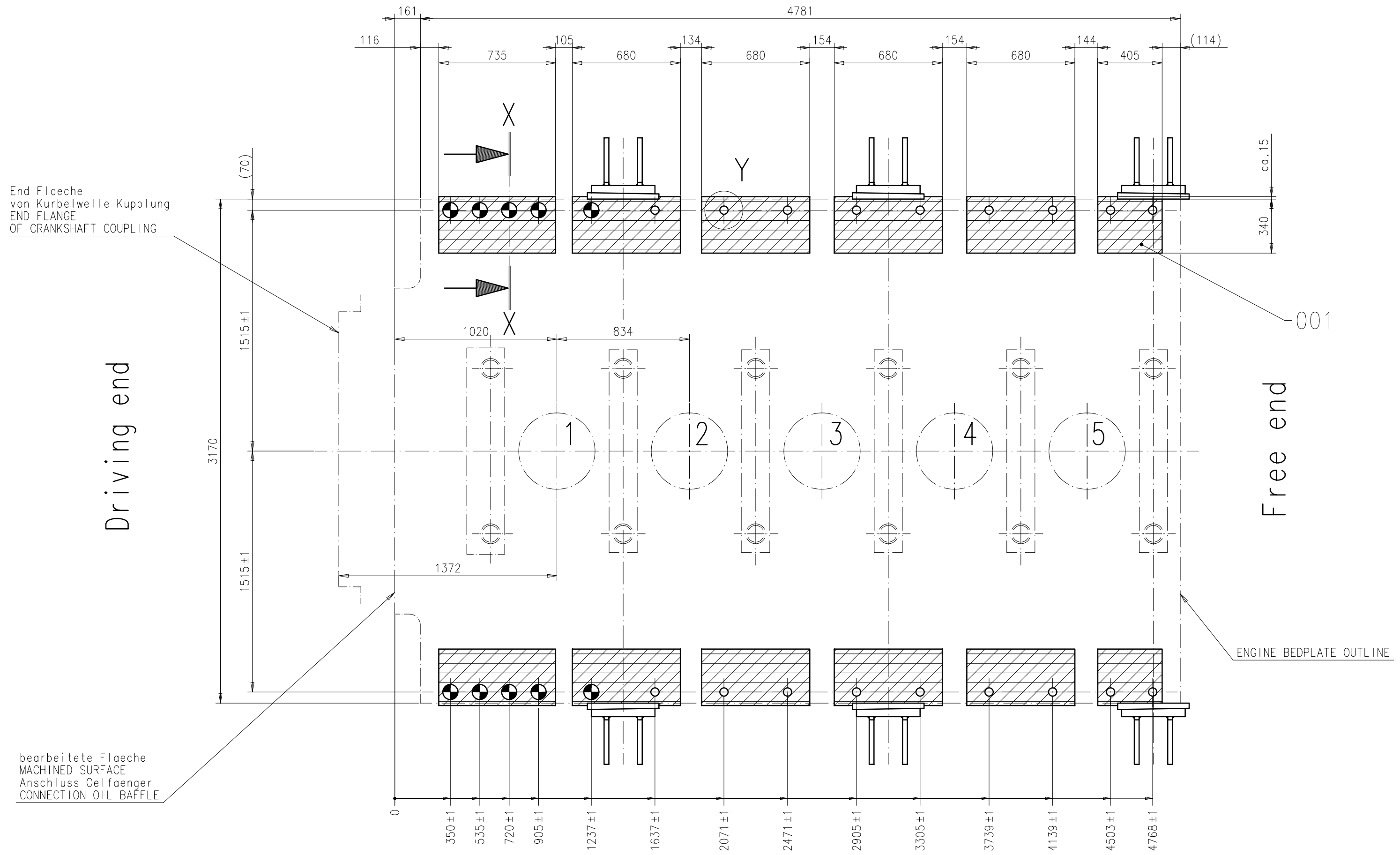


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
5	4.5	3860	26948	68	162

No. of cyls.	Total No. of holes	No. of thrust sleeves
5	28	10

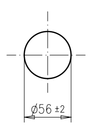
Remarks:

*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm^2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

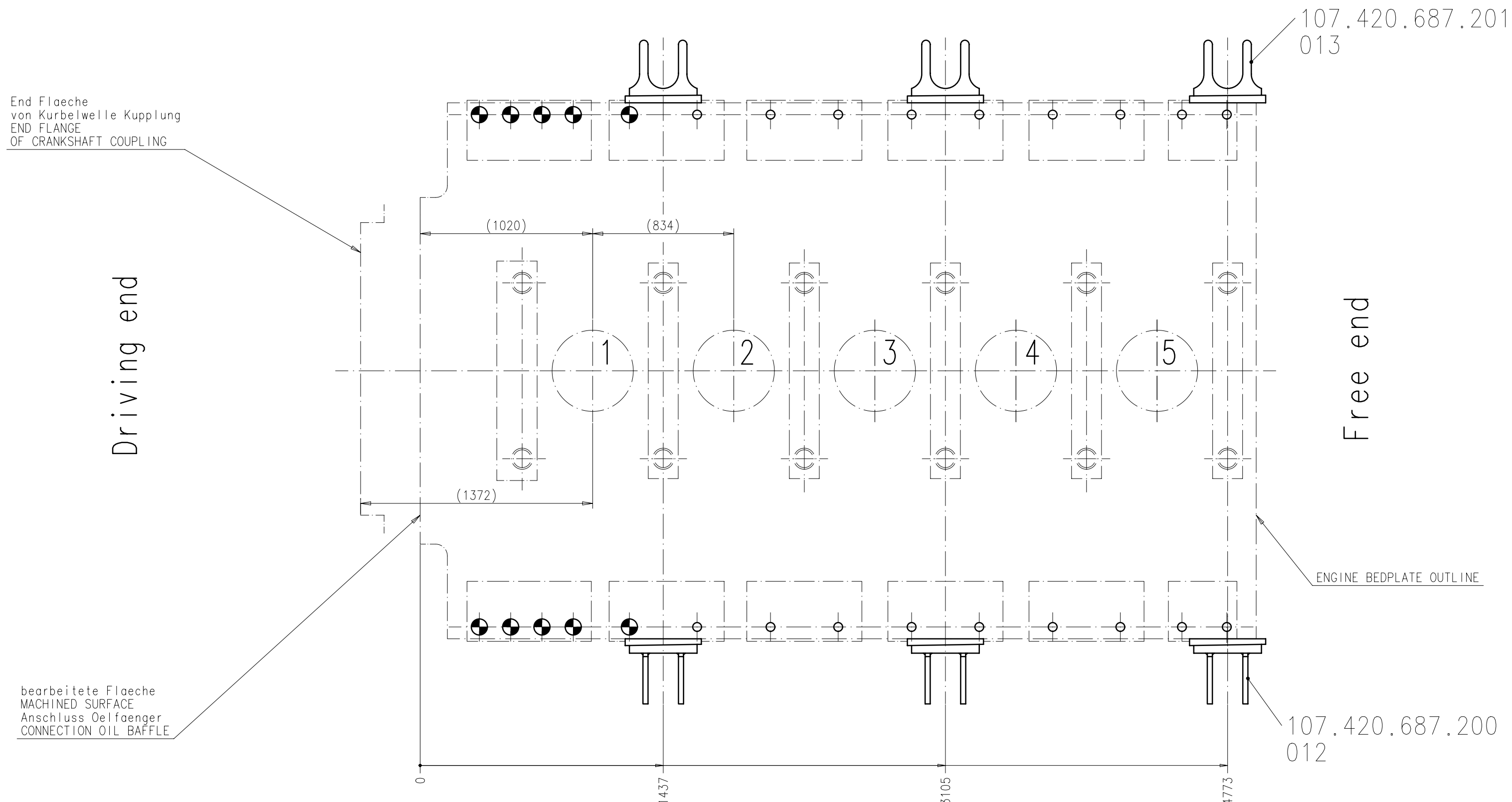
*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

*3) Referring to a standardized chock thickness of 25 up to 60mm.

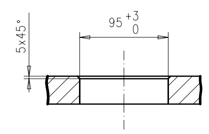
Y 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



X-X 1:5



SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

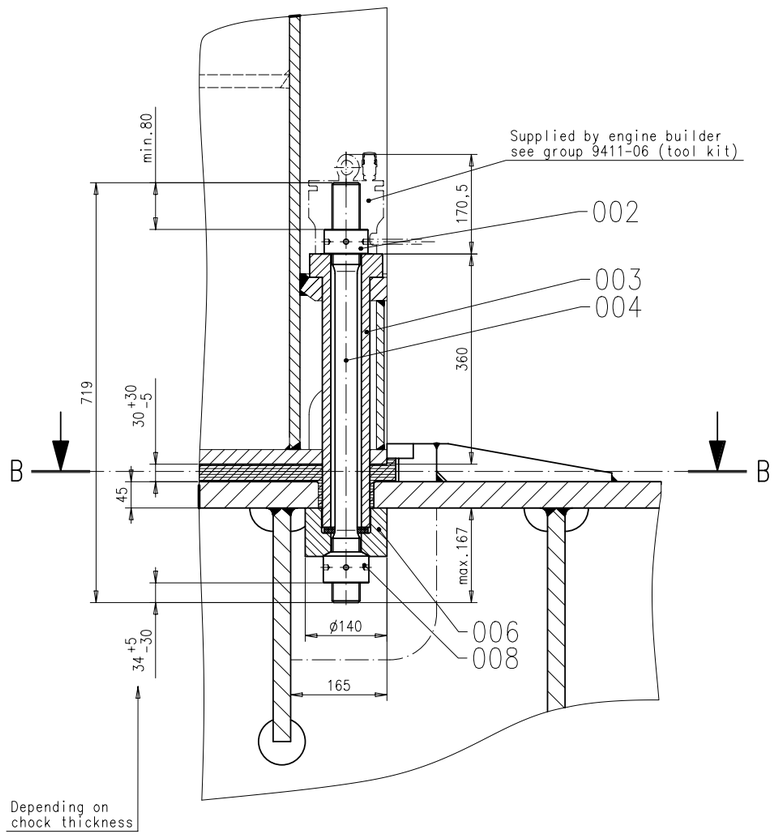
Q-Code	XXXXX
Main Drw.	H
Standard	ISO JIS
Modif.	A EAAD082040 23.06.2010
Product	5RT-flex48T-D, 5RTA48, 5RTA48T, 5RTA48T-B, 5RTA48T-D
Title	ENGINE SEATING/FOUNDATION THRUST SLEEVES
Units	mm kg IDE
Basic Material	
Net Weight	
Made	21.05.2010 jba029 Baumann
Chkd	
Appd	16.07.2010
Scale	1:14
Design Group	9710
Size	A0
Page	2/3
Material ID	
Drawing ID	107.420.687
Rev.	A

WÄRTSILÄ

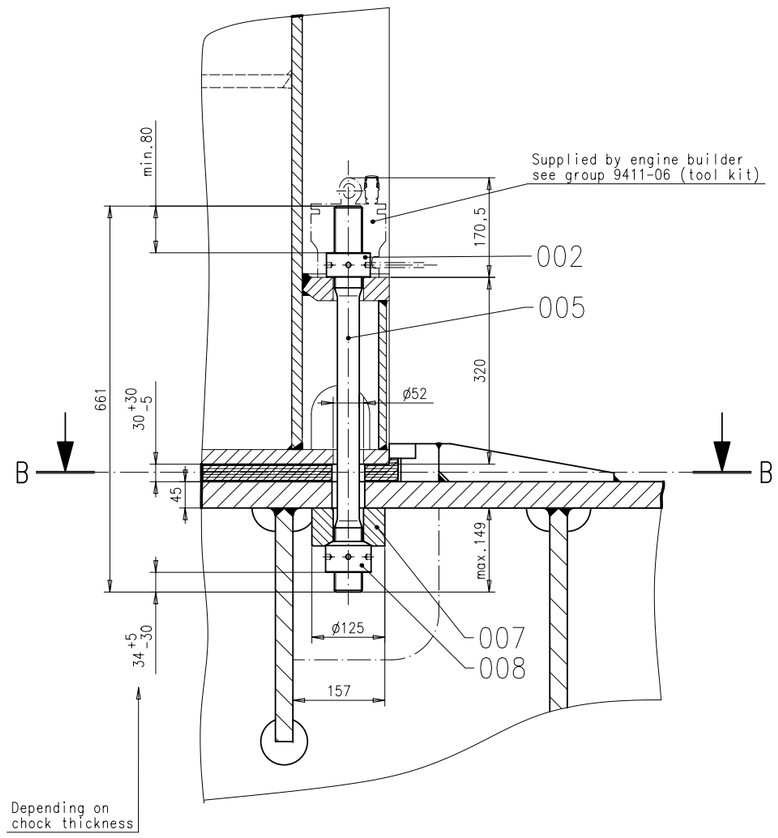
Approved

ASD - ASSEMBLY DRAWING - Internal

C–C

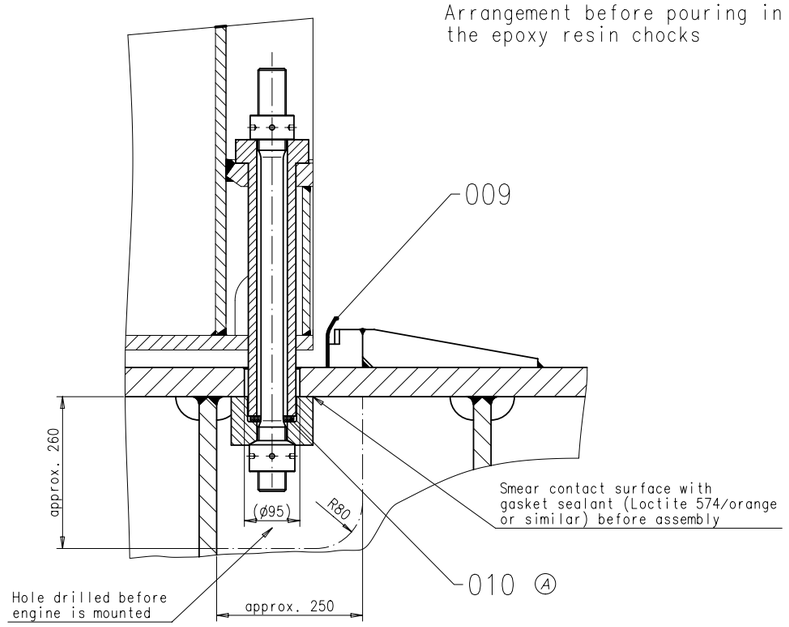


D–D



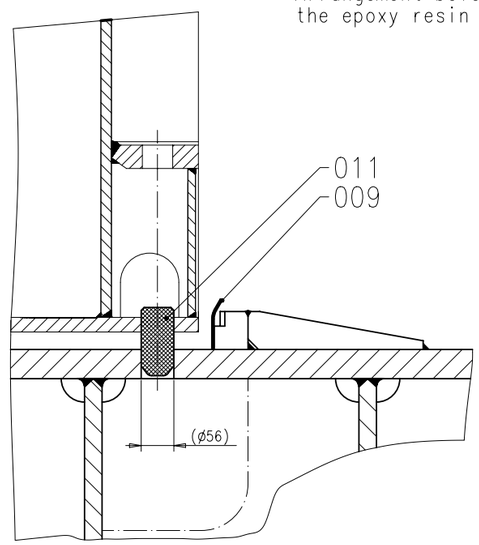
C–C

Arrangement before pouring in
the epoxy resin chocks



D–D

Arrangement before pouring in
the epoxy resin chocks



Free space for I.C.							Q-Code XXXXX		Main Drw.
							Standard ISO JIS		H
Modif.	A	EAD082040	23.06.2010						
	Number		Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date

WÄRTSILÄ

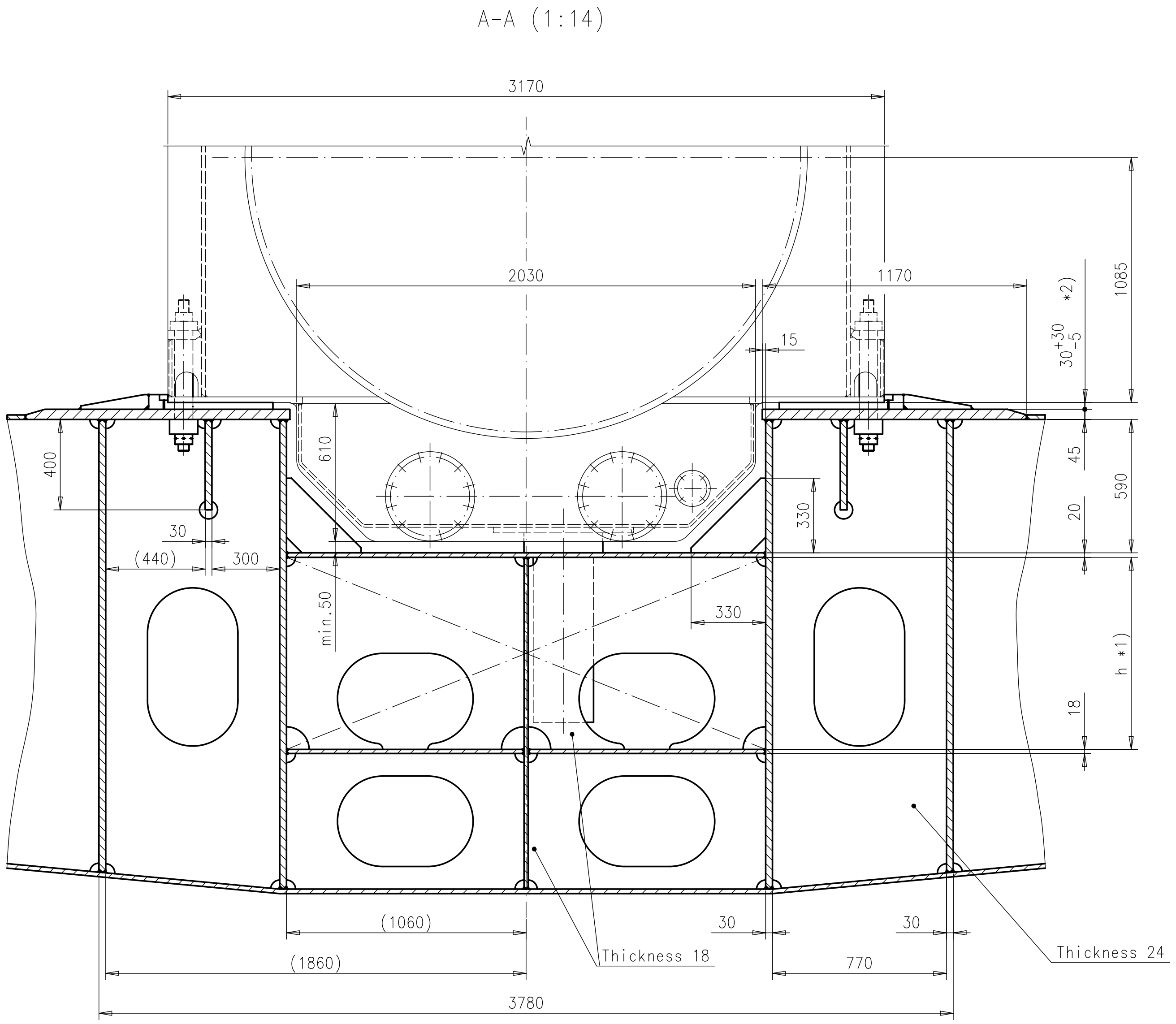
Product
SRT-flex48T-D
SRTA48
SRTA48T
SRTA48T-B
SRTA48T-D

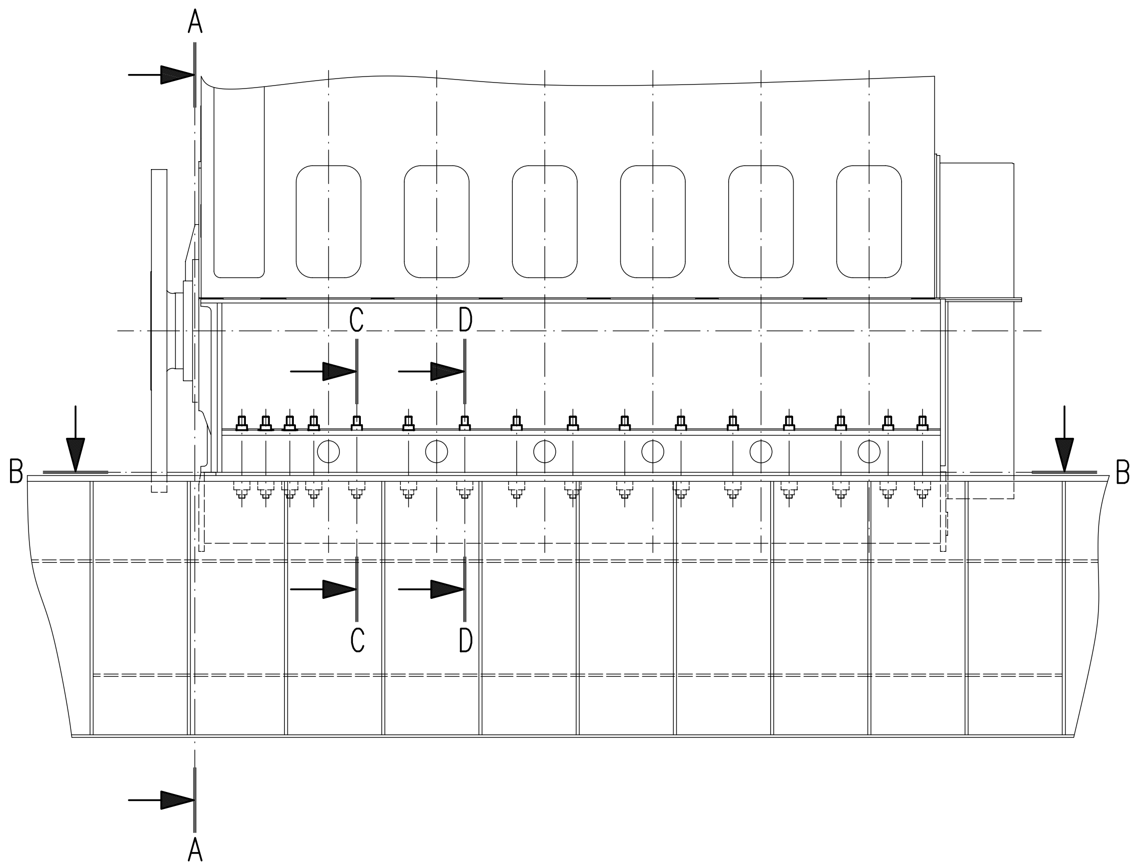
ENGINE SEATING/FOUNDATION
THRUST SLEEVES

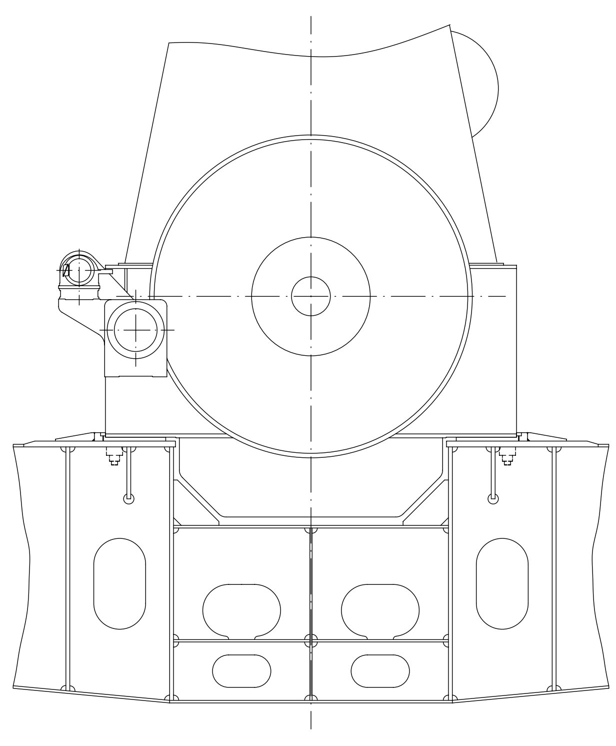
Units mm kg	IDE	Basic Material			Net Weight
SURFACE PROTECTION SEE GROUP 0344	Made	21.05.2010 jba029 Baumann	Scale 1:14	Size A1	Page 3/3	Material ID
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710	Drawing ID 107.420.687		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	16.07.2010				

Approved

ASD - ASSEMBLY DRAWING - Internal







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness $30\pm^{30}_{5}$.
- Final chock thickness to be determined by shipyard.

107.422.462.200	5 Cyl	Execution with side stoppers welded type
107.422.462.201	5 Cyl	Execution with side stoppers flame-cut type

Net Weight 550	611	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
1	1	011	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001
3	-	010	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4
-	3	009	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45
18	18	008	107.423.297.001	PIN		107.423.297		0.001
1	1	007	107.367.119.001	SEALING PIECE		107.367.119		0.001
28	28	006	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4	1.2
28	28	005	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1
18	18	004	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3
10	10	003	107.422.461.001	FITTED STUD		107.422.461	34CrMo4 SCM 435	8.2
28	28	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001

Quantity PER ENGINE

Material ID: 107.422.462.201 | 107.422.462.200

Free space for lic.

Q-Code XXXXX | Main Drw. H | Standard ISO JIS | Approved

Modif.	Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date
A	EAAD082040	23.06.2010									

WÄRTSILÄ

Product
5RT-flex48T-D
5RTA48
5RTA48T
5RTA48T-B
5RTA48T-D

ENGINE SEATING/FOUNDATION
FITTED STUDS

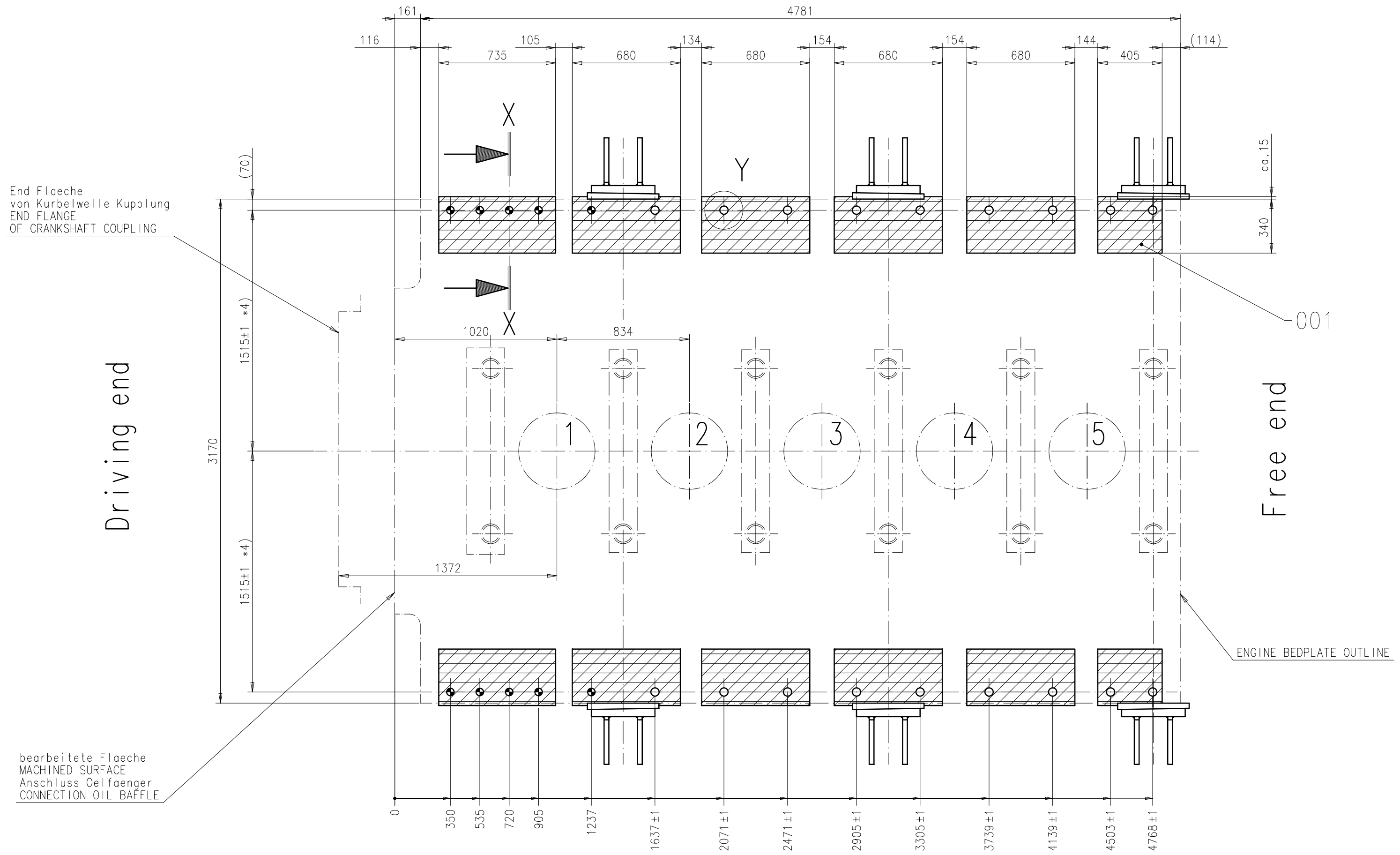
Units mm kg | IDE | Basic Material | Net Weight

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Made **26.05.2010 jba029 Baumann** | Scale 1:10 | Size A1 | Page 1/3 | Material ID
Chkd | Design Group 9710 | Drawing ID 107.422.462 | Rev. A
Appd *16.07.2010*

ASD - ASSEMBLY DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE



Remarks:

*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

*3) Referring to a standardized chock thickness of 25 up to 60mm.

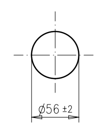
*4) Tolerance does not apply for fitted studs.

Table 1: Dimensions of epoxy resin chocks *1)

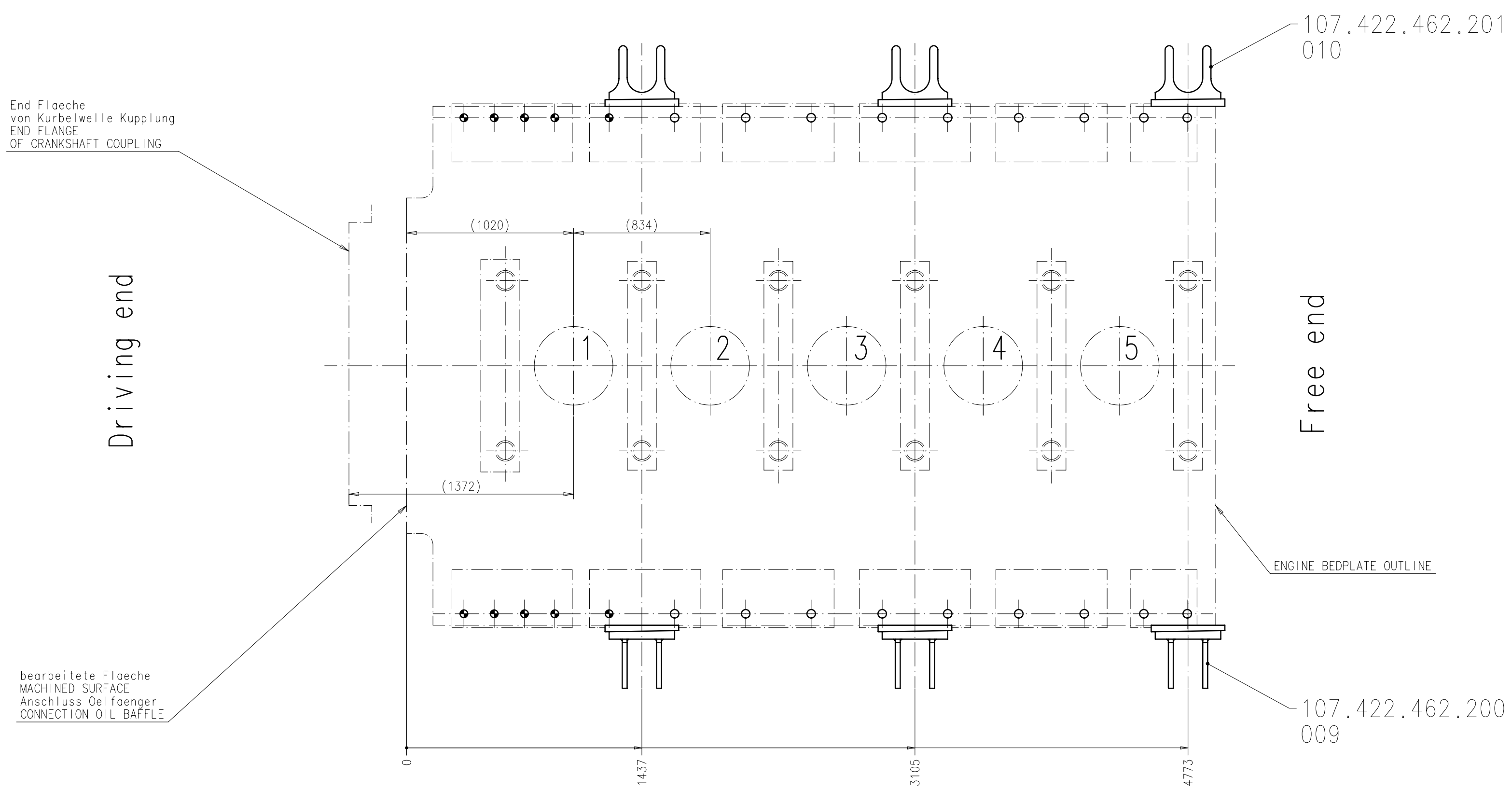
No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
5	4.5	3860	26948	68	162

No. of cyls.	Total No. of holes	No. of fitted studs
5	28	10

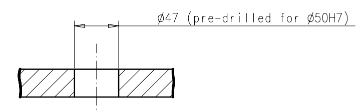
Y 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



X-X 1:5



Q-Code	XXXXX	Main Drw.	
Standard	ISO JIS	H	
Modif.	A EAAD082040	23.06.2010	
Product	5RT-flex48T-D 5RTA48 5RTA48T 5RTA48T-B 5RTA48T-D	ENGINE SEATING/FOUNDATION FITTED STUDS	
Units	mm kg	IDE	
Basic Material		Net Weight	
Made	26.05.2010 jba029 Baumann	Scale 1:1	Size A0, Page 2/3, Material ID
Chkd		Design Group 9710	Drawing ID 107.422.462, Rev. A
Appd	16.07.2010		

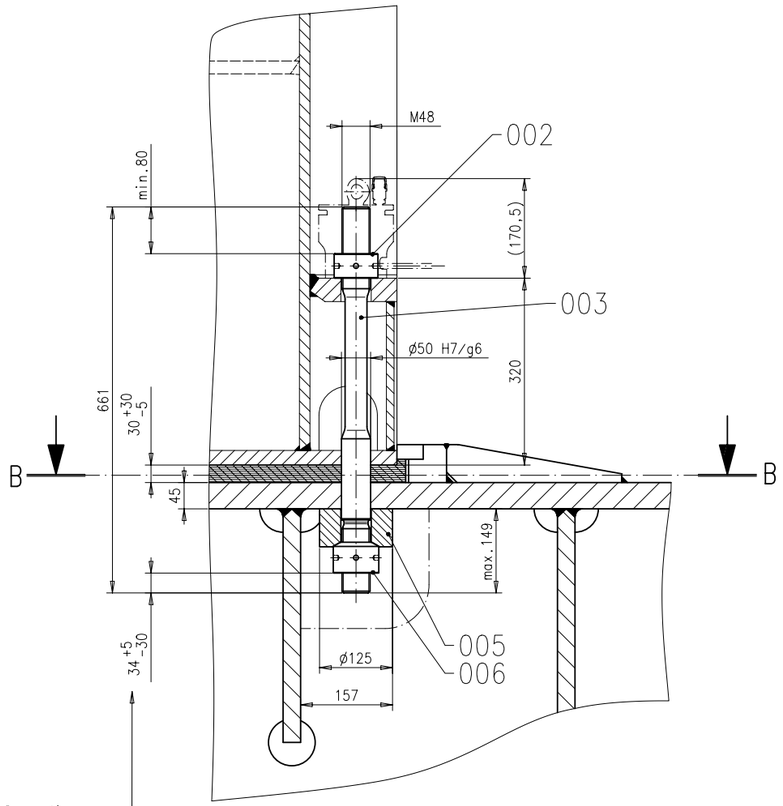
SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

WÄRTSILÄ

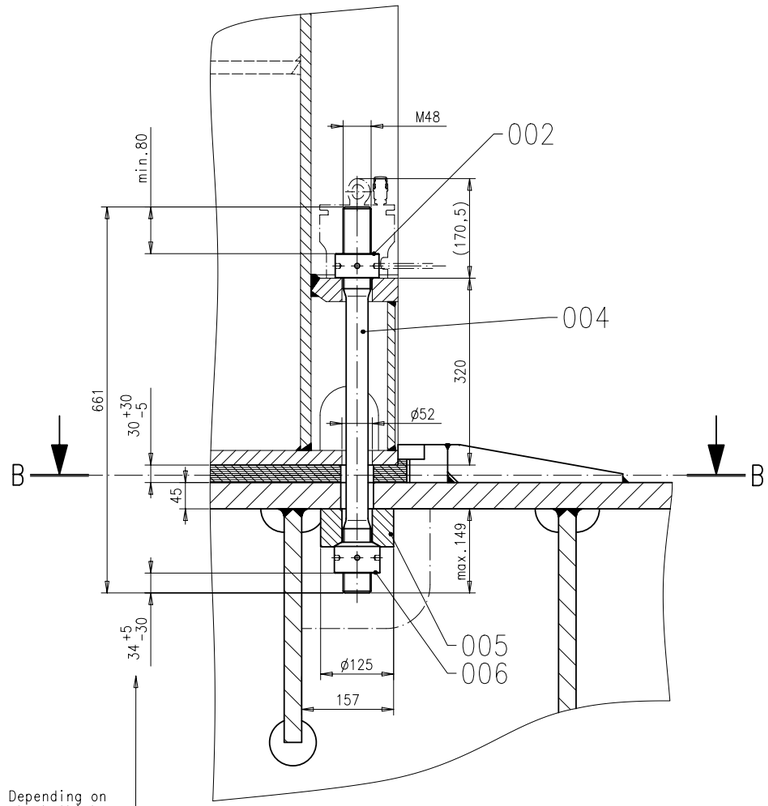
ASD - ASSEMBLY DRAWING - Internal

Approved

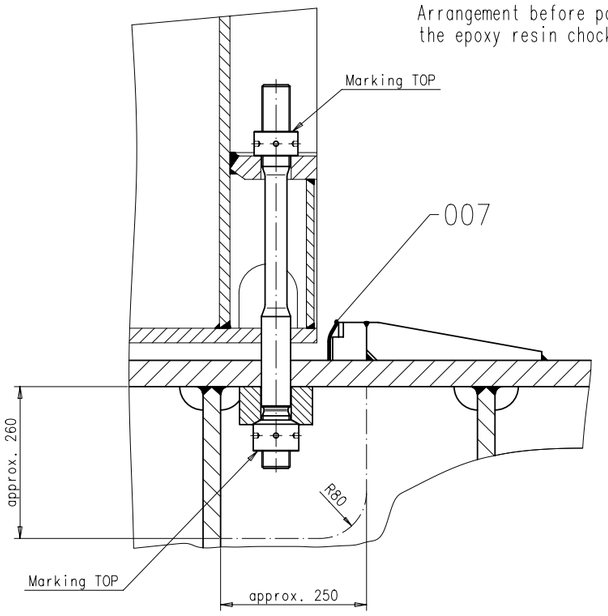
C–C



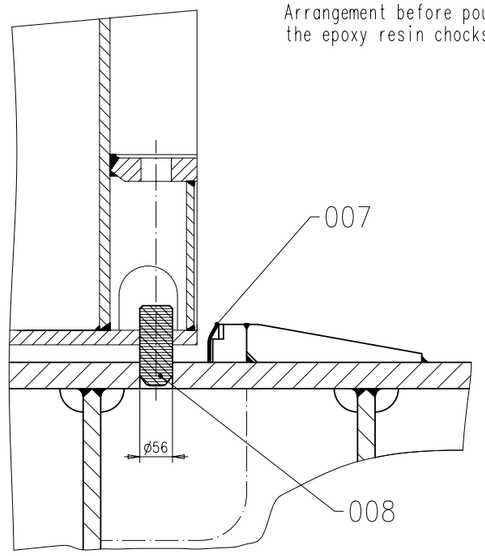
D–D



C–C



D–D



Free space for i.c.							Q-Code XXXXX		Main Drw. H
Modif.	A	EAAD082040	23.06.2010				Standard ISO JIS		
		Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date

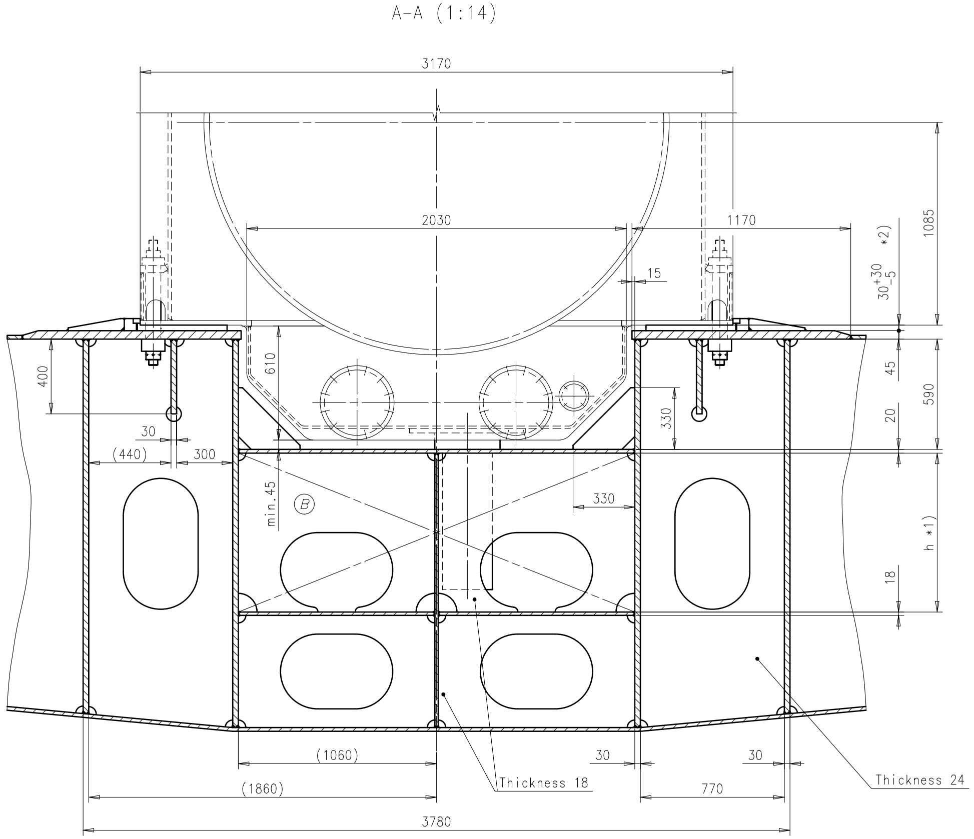
WÄRTSILÄ

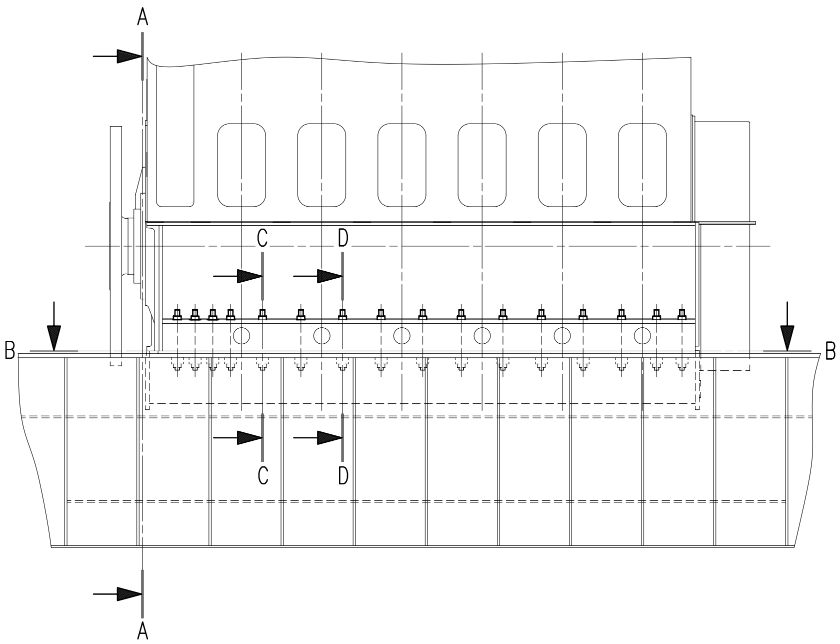
Product: 5RT-flex48T-D, 5RTA48, 5RTA48T, 5RTA48T-B, 5RTA48T-D

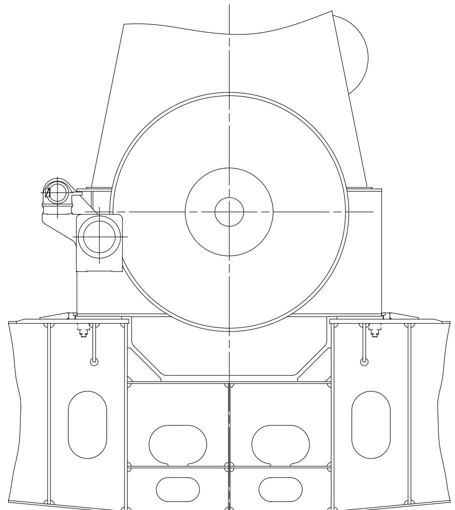
ENGINE SEATING/FOUNDATION
FITTED STUDS

Units mm kg	IDE	Basic Material			Net Weight
SURFACE PROTECTION SEE GROUP 0344	Made 26.05.2010 jba029 Baumann	Scale 1:1	Size A1	Page 3/3	Material ID
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710	Drawing ID 107.422.462		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 16.07.2010				

ASD - ASSEMBLY DRAWING - Internal







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness $30\pm^{30}_{5}$.
- Final chock thickness to be determined by shipyard.

107.420.688.200	6 Cyl	Execution with side stoppers welded type
107.420.688.201	6 Cyl	Execution with side stoppers flame-cut type

Net Weight 826 (Quantity PER ENGINE)	Net Weight 765 (Quantity PER ENGINE)	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
1	1	014	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001
3	-	013	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4
-	3	012	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45.0
22	22	011	107.423.297.001	PIN		107.423.297		0.001
10	10	010	PAAD004345	JOINT DISC		DAAD005525	Rubber750 Rubber750	0.01
1	1	009	107.367.119.001	SEALING PIECE		107.367.119		0.001
32	32	008	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4 34CrMo4	1.2
22	22	007	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1
10	10	006	107.422.173.001	CONICAL SOCKET		107.422.173	34CrMo4 SCM 435	7.4
22	22	005	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3
10	10	004	107.422.170.001	ELASTIC BOLT		107.422.170	34CrMo4 SCM 435	7.8
10	10	003	107.422.172.001	SLEEVE		107.422.172	34CrMo4 SCM 435	13.8
32	32	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001

Material ID					
107.420.688.201 / 107.420.688.200	Free space for lic.		Q-Code XXXXX	Standard ISO JIS	Main Drw. H

Modif.	Number	Drawn date
A	EAAD082040	19.05.2010
B	EAAD086378	26.01.2016

Winterthur Gas & Diesel

Product: 6RT-flex48T-D, 6RTA48, 6RTA48T, 6RTA48T-B, 6RTA48T-D

ENGINE SEATING/FOUNDATION
THRUST SLEEVES

SURFACE PROTECTION SEE GROUP 0344	Units mm kg	IDE	Basic Material	Net Weight
TOLERANCING PRINCIPLE ISO8015	Made 25.05.2010 jba029 Baumann	Scale 1:10	Size A1	Page 1/3	Material ID
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Chkd	Design Group 9710	Drawing ID 107.420.688	Rev. B
	Appd 29.09.2009 jba029 Baumann			

Approved

ASD - ASSEMBLY DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

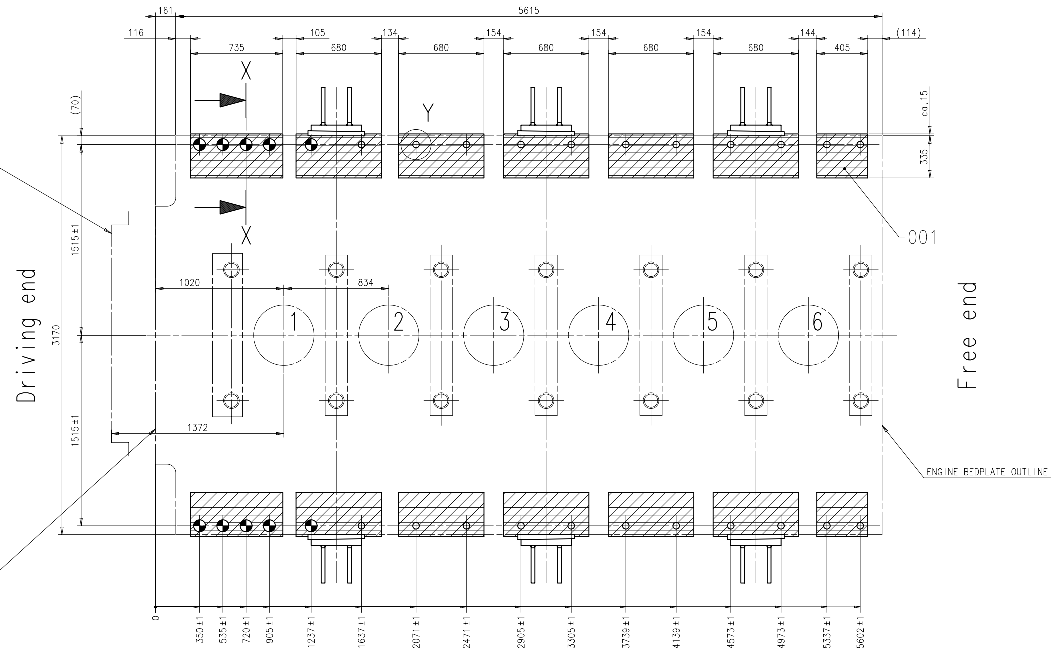


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
6	4.5	4540	30444	77	183

No. of cyls.	Total No. of holes	No. of thrust sleeves
6	32	10

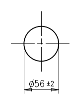
Remarks:

*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm^2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

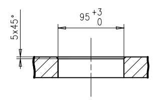
*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

*3) Referring to a standardized chock thickness of 25 up to 60mm.

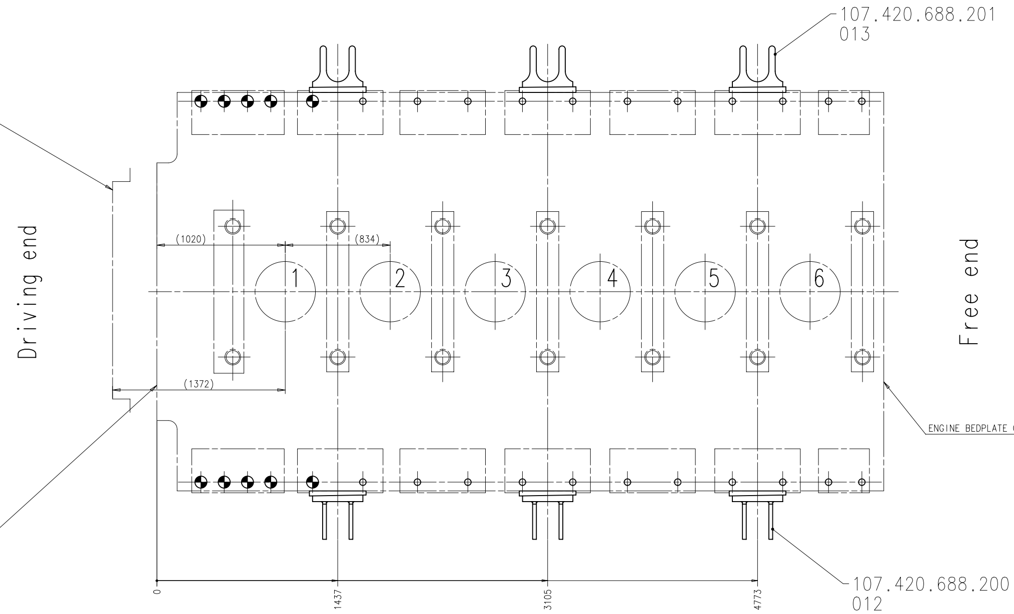
Y 1:5



X-X 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE

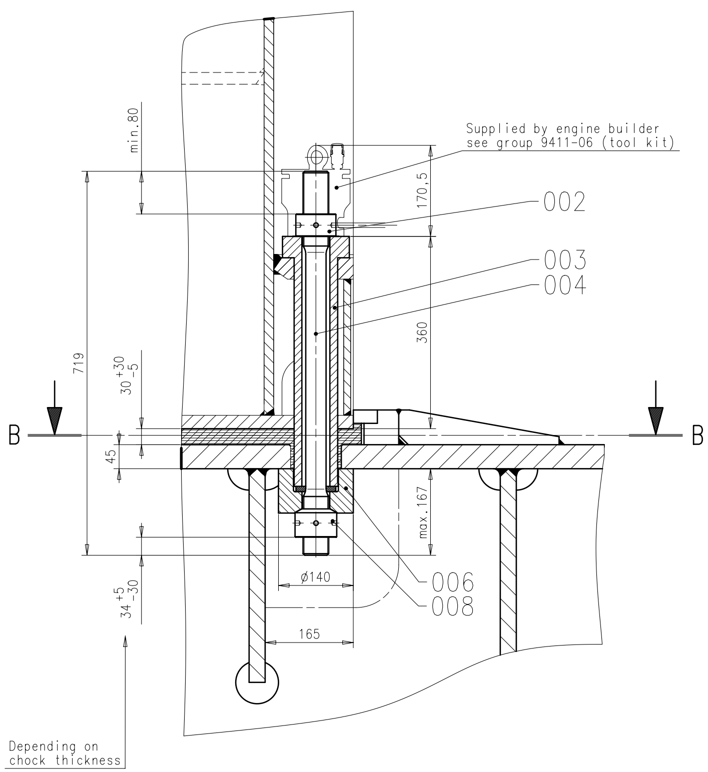


Free space for lic.						Q-Code XXXXX Standard ISO JIS	Main Drw. H
Modif.	(A) EAAD082040 Number	19.05.2010 Drawn date	(B) EAAD086378 Number	26.01.2016 Drawn date	( ) Number / Drawn date	( ) Number / Drawn date	
WIN GD Winterthur Gas & Diesel	Product 6RT-flex48T-D 6RTA48 6RTA48T 6RTA48T-B 6RTA48T-D	ENGINE SEATING/FOUNDATION THRUST SLEEVES					
Units mm kg	IDE		Basic Material			Net Weight	
SURFACE PROTECTION SEE GROUP 0344	Made 25.05.2010 jba029 Baumann	Scale 1:15	Size A0	Page 2/3	Material ID		
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710	Drawing ID 107.420.688			Rev. B	
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 29.09.2009 jba029 Baumann						

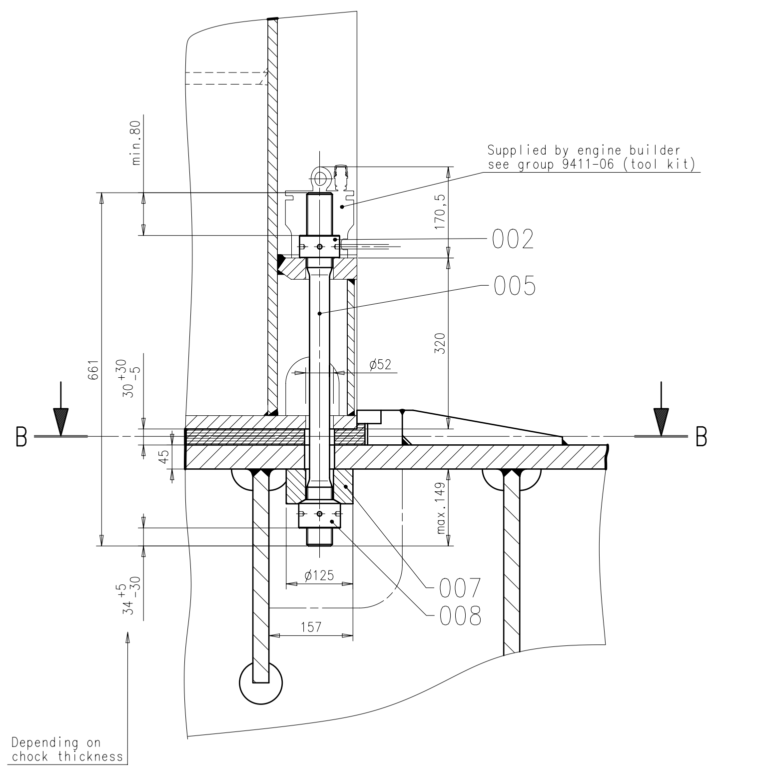
Approved

ASD - ASSEMBLY DRAWING - Internal

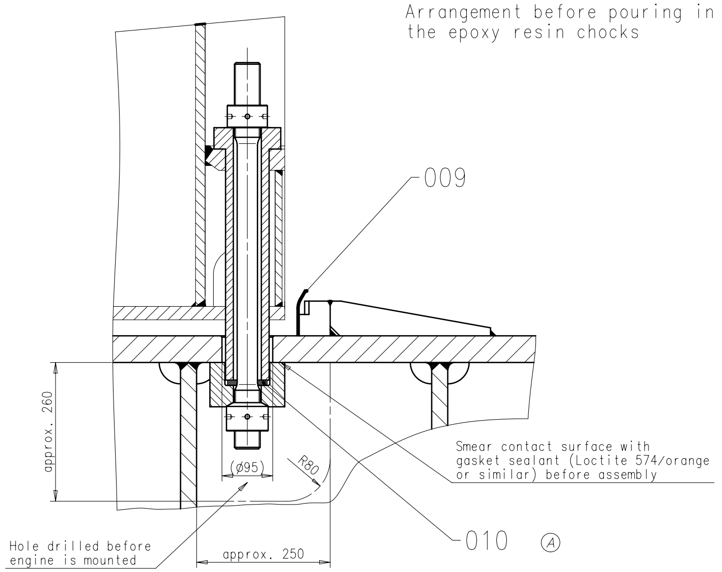
C-C



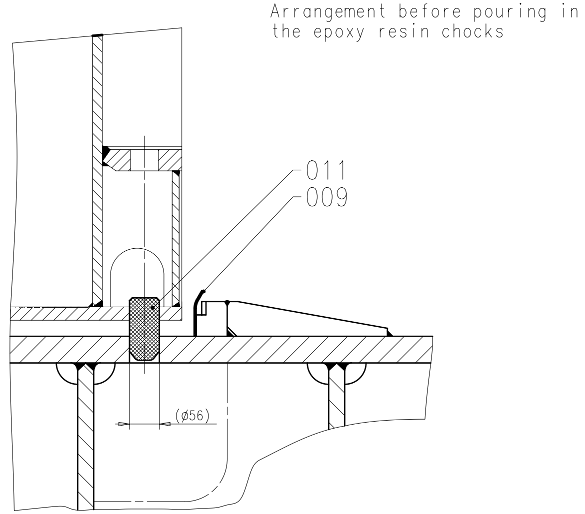
D-D



C-C



D-D



Free space for lic.						Q-Code XXXXX / Standard ISO JIS	Main Drw. H
Modif.	A EAAD082040 (Number)	19.05.2010 (Drawn date)	B EAAD086378 (Number)	26.01.2016 (Drawn date)	Number / Drawn date	Number / Drawn date	

Winterthur Gas & Diesel

Product: 6RT-flex48T-D, 6RTA48, 6RTA48T, 6RTA48T-B, 6RTA48T-D

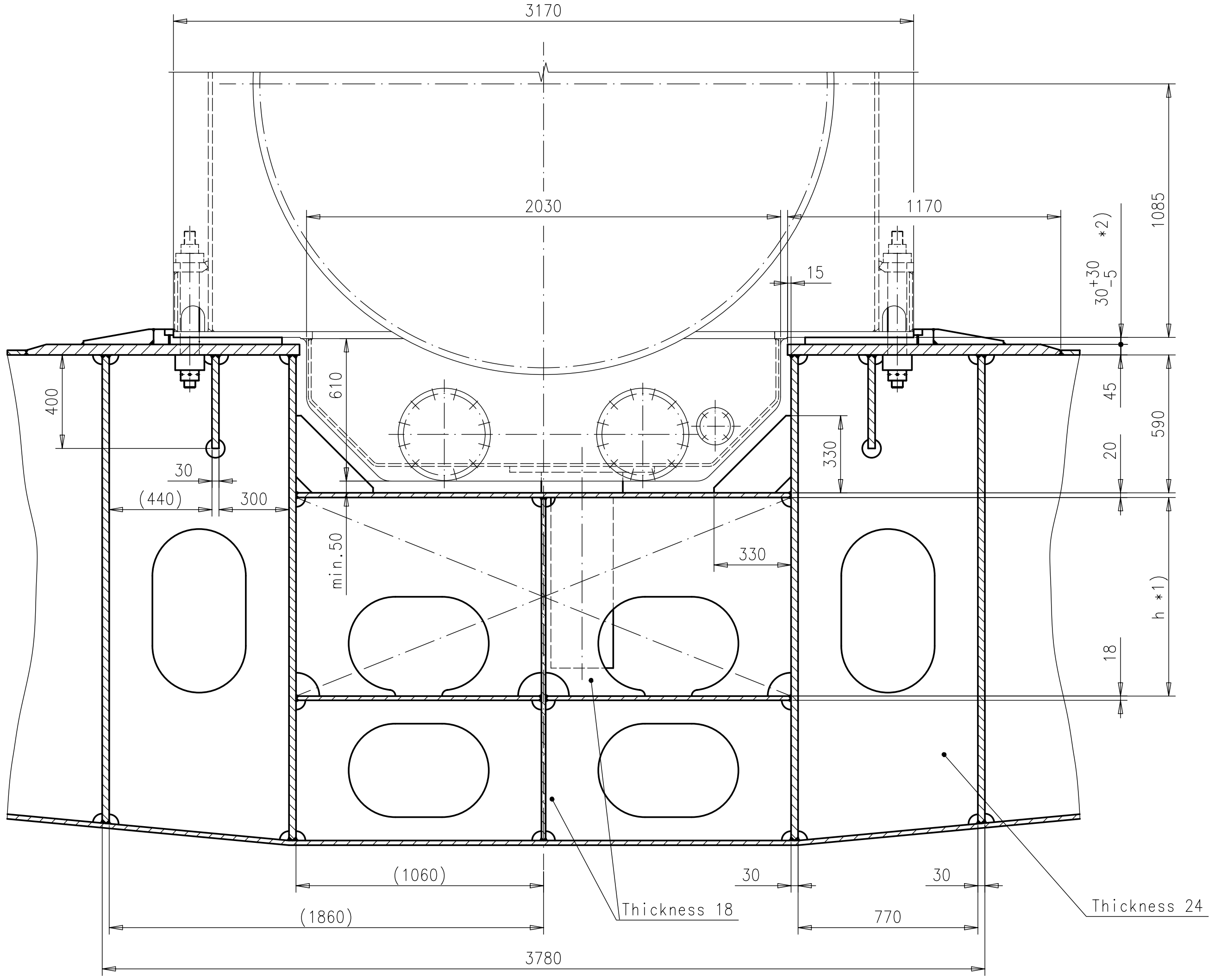
ENGINE SEATING/FOUNDATION
THRUST SLEEVES

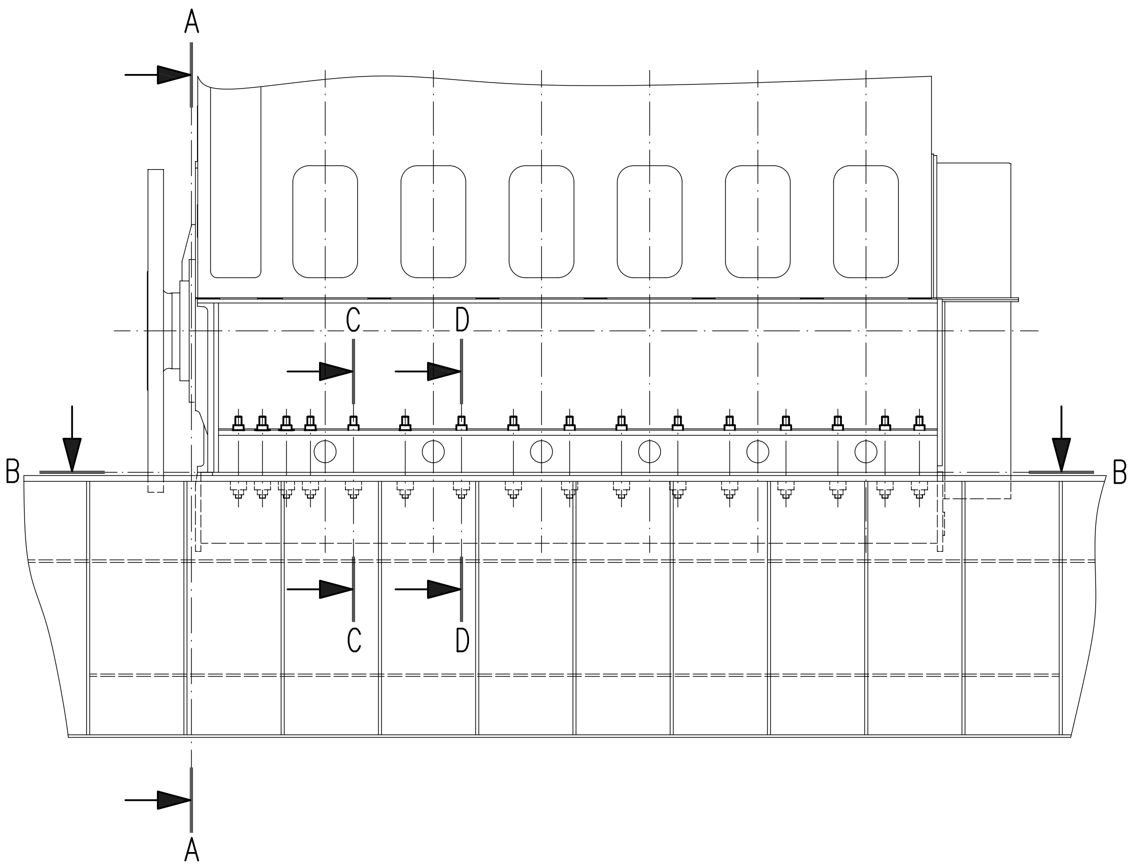
SURFACE PROTECTION SEE GROUP 0344	Units mm kg	IDE	Basic Material	Net Weight
	Made 25.05.2010 jba029 Baumann	Scale 1:15	Size A1	Page 3/3
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710	Material ID	
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 29.09.2009 jba029 Baumann		Drawing ID 107.420.688	Rev. B

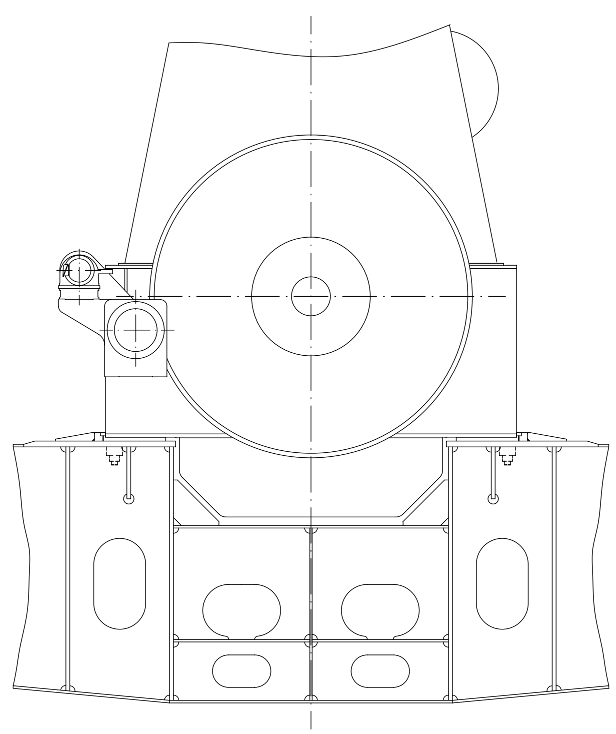
Approved

ASD - ASSEMBLY DRAWING - Internal

A-A (1:14)







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness $30\pm^{30}_{5}$.
- Final chock thickness to be determined by shipyard.

107.422.463.200	6 Cyl	Execution with side stoppers welded type
107.422.463.201	6 Cyl	Execution with side stoppers flame-cut type

Net Weight 669	Net Weight 608	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
1	1	011	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001
3	-	010	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4
-	3	009	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45
22	22	008	107.423.297.001	PIN		107.423.297		0.001
1	1	007	107.367.119.001	SEALING PIECE		107.367.119		0.001
32	32	006	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4	1.2
32	32	005	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1
22	22	004	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3
10	10	003	107.422.461.001	FITTED STUD		107.422.461	34CrMo4 SCM 435	8.2
32	32	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001

Quantity PER ENGINE

Material ID: 107.422.463.201 / 107.422.463.200

Free space for lic.

Q-Code XXXXX | Main Drw. H | Standard ISO JIS

Modif.	Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date
A	EAAD082040	23.06.2010									

WÄRTSILÄ

Product: 6RT-flex48T-D, 6RTA48, 6RTA48T, 6RTA48T-B, 6RTA48T-D

ENGINE SEATING/FOUNDATION
FITTED STUDS

SURFACE PROTECTION SEE GROUP 0344	Units mm kg	IDE	Basic Material		Net Weight
TOLERANCING PRINCIPLE ISO8015	Made 26.05.2010 jba029 Baumann	Scale 1:10	Size A1	Page 1/3	Material ID
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Chkd / Appd 16.07.2010	Design Group 9710	Drawing ID 107.422.463		Rev. A

Approved

ASD - ASSEMBLY DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

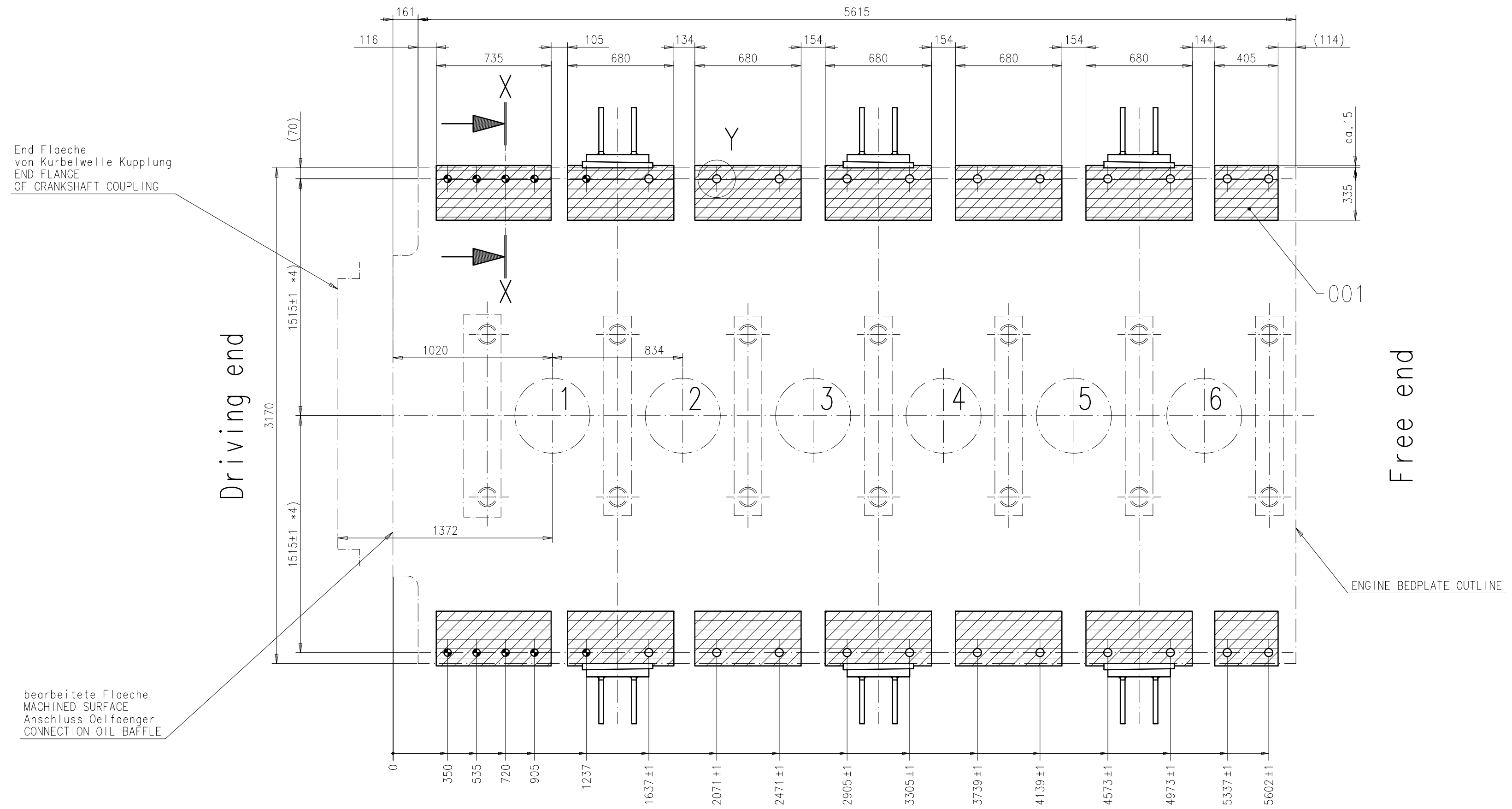


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
6	4.5	4540	30444	77	183

No. of cyls.	Total No. of holes	No. of fitted studs
6	32	10

Remarks:

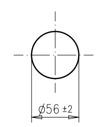
*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm^2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

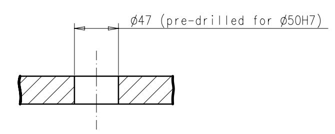
*3) Referring to a standardized chock thickness of 25 up to 60mm.

*4) Tolerance does not apply for fitted studs.

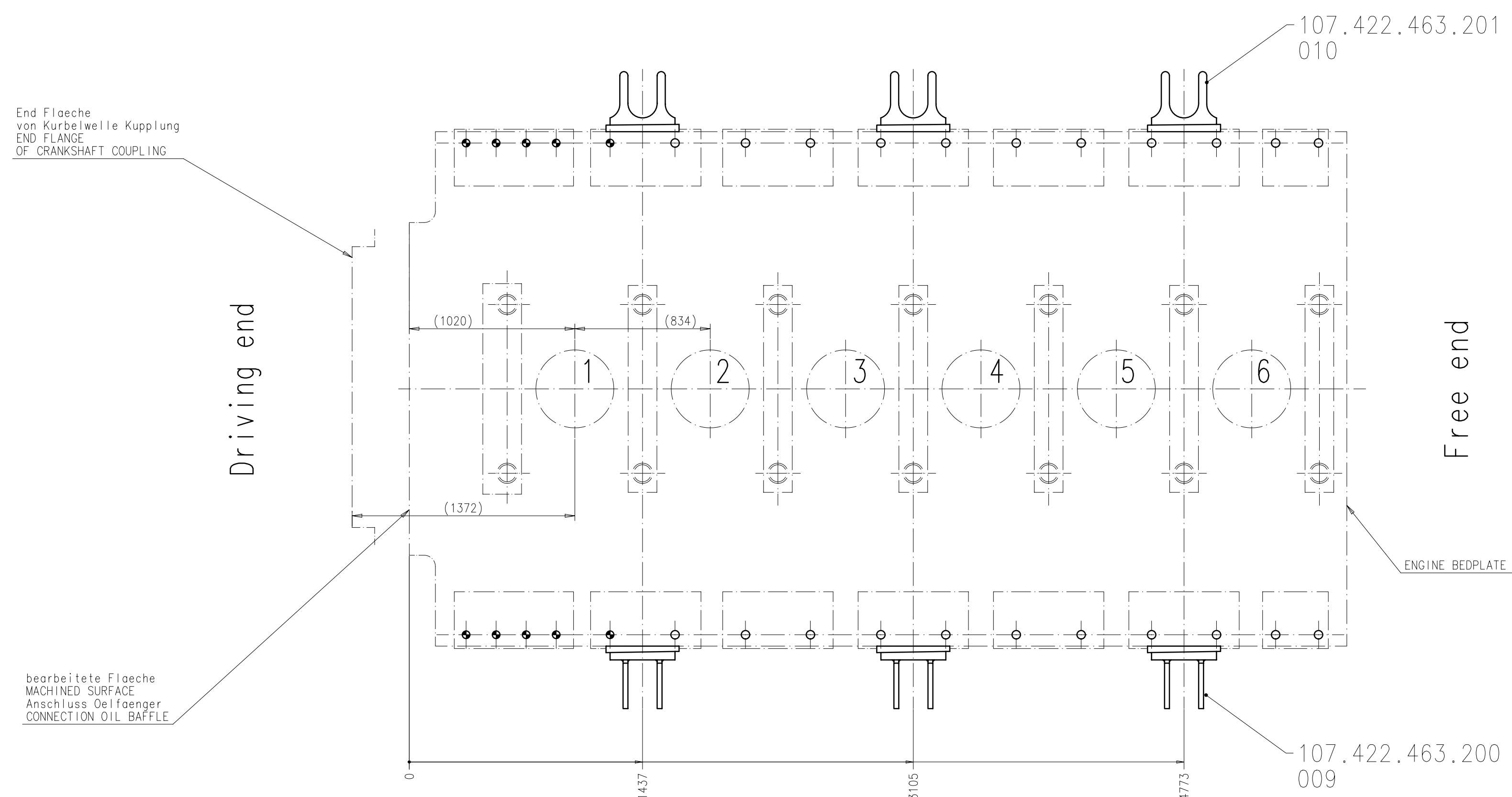
Y 1:5



X-X 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Free space for lic. | Q-Code XXXXX | Main Drw. H | Standard ISO JIS
Modif. (A) EAAD082040 23.06.2010 | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date

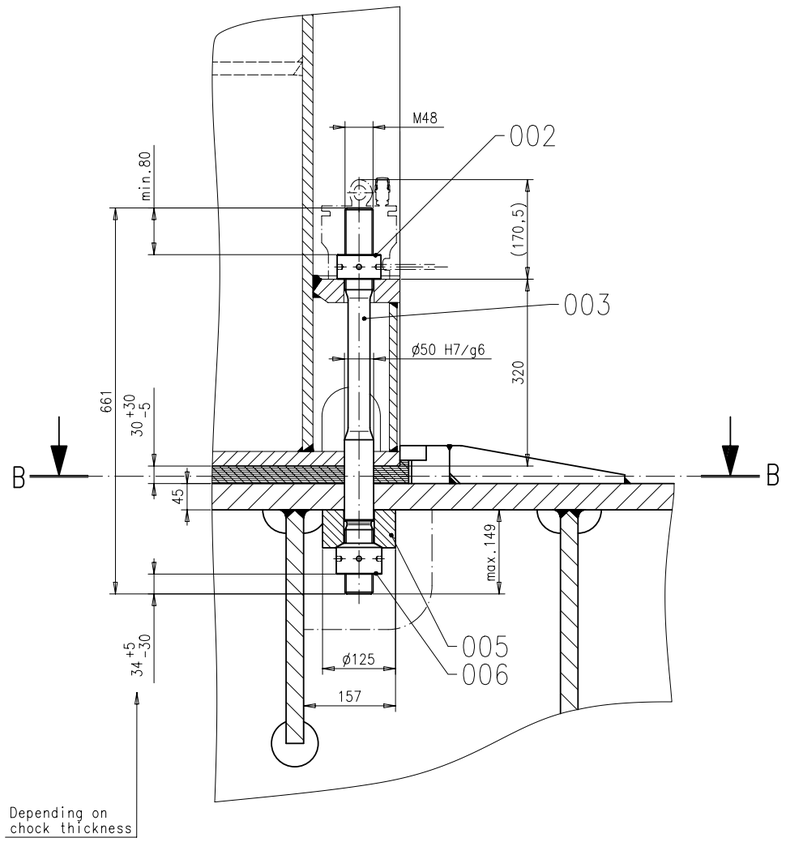
WÄRTSILÄ
Product: 6RT-flex48T-D, 6RTA48, 6RTA48T, 6RTA48T-B, 6RTA48T-D

ENGINE SEATING/FOUNDATION
FITTED STUDS

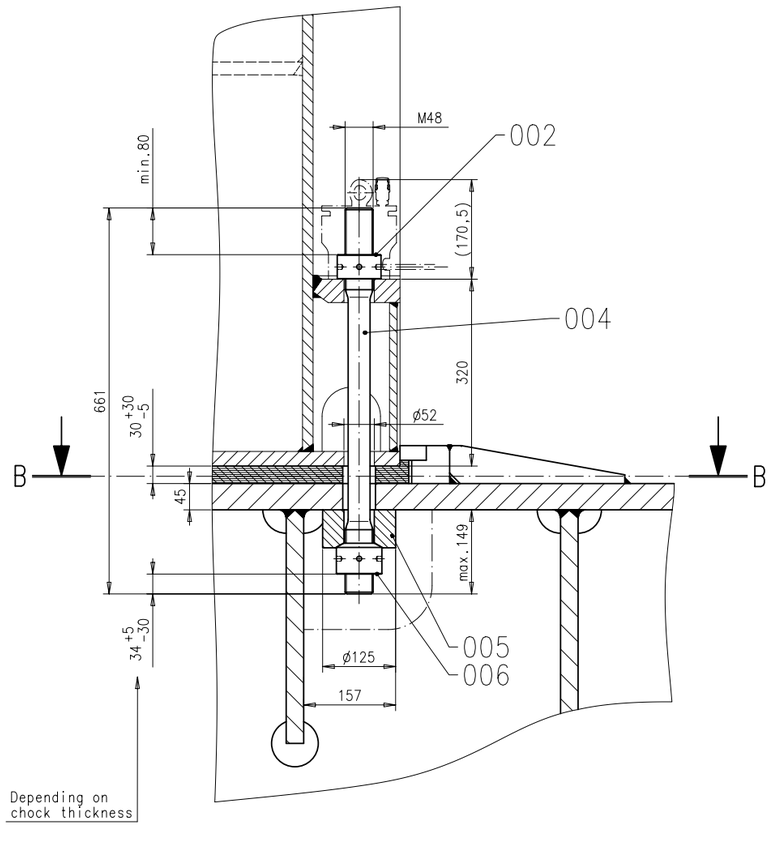
Units mm kg | IDE | Basic Material | Net Weight
Made 26.05.2010 jba029 Baumann | Scale 1:14 | Size A0 | Page 2/3 | Material ID
Chkd
Appd 16.07.2010 | Design Group 9710 | Drawing ID 107.422.463 | Rev. A

Approved
ASD - ASSEMBLY DRAWING - Internal

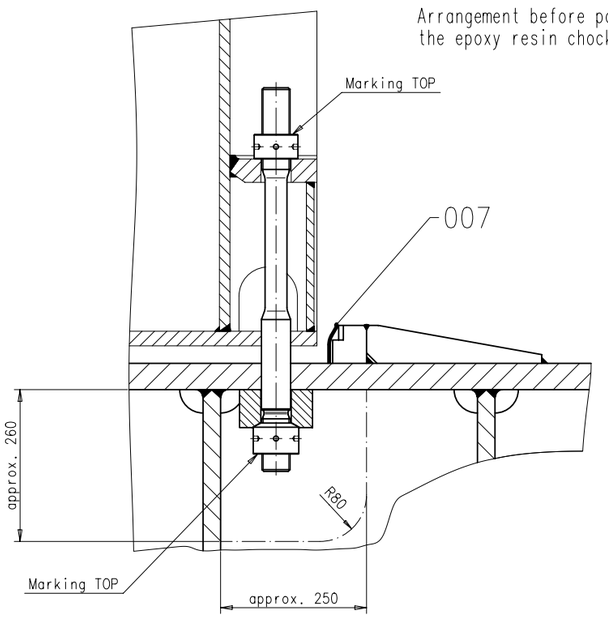
C–C



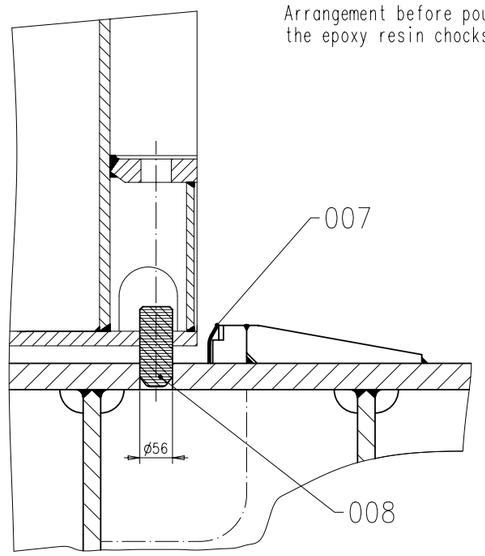
D–D



C–C



D–D



Free space for I.C.								Q-Code XXXXX		Main Drw.
								Standard ISO JIS		H
Modif.	A	EAAD082040	23.06.2010							
	Number		Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	

WÄRTSILÄ

Product: 6RT-flex48T-D, 6RTA48, 6RTA48T, 6RTA48T-B, 6RTA48T-D

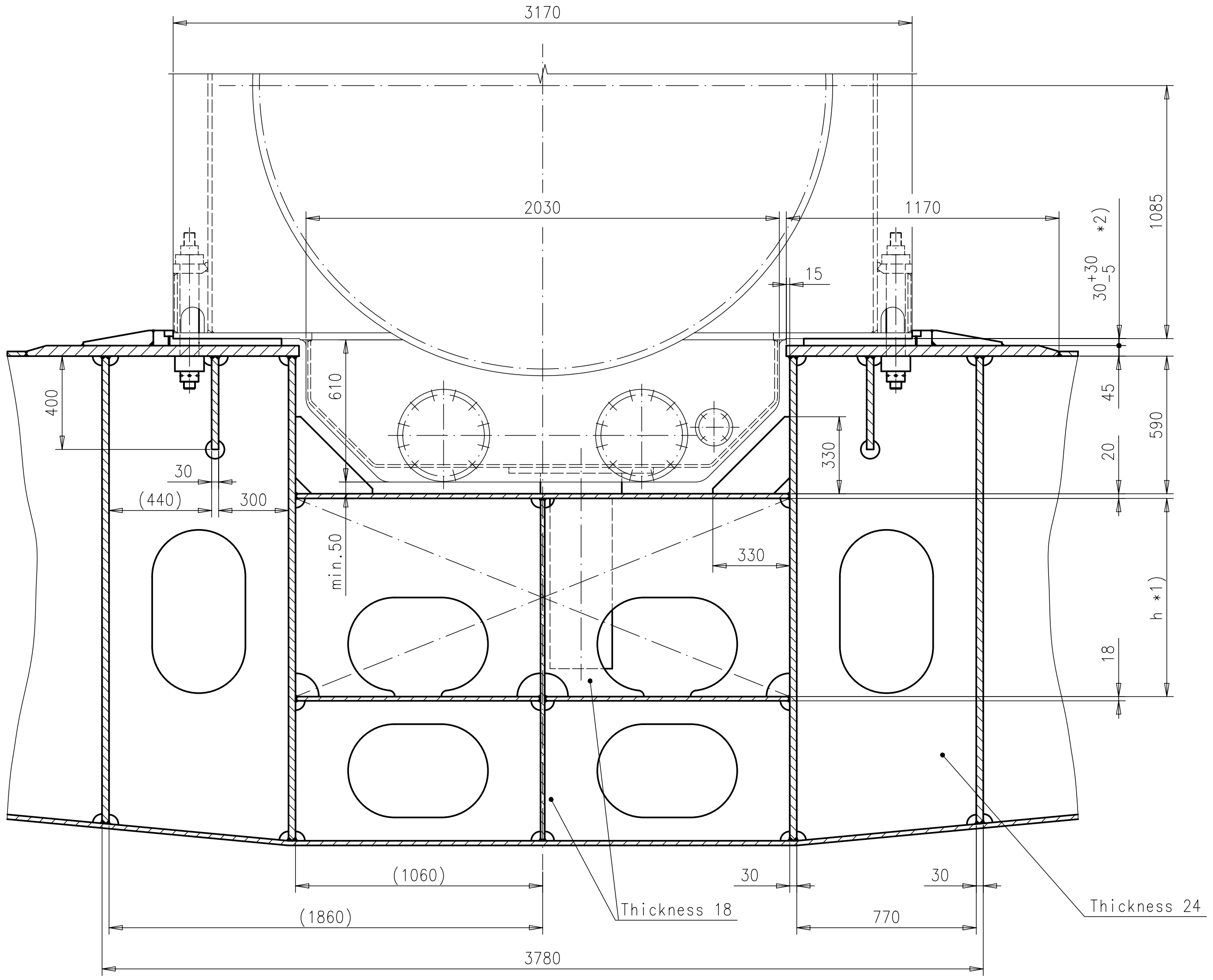
ENGINE SEATING/FOUNDATION
FITTED STUDS

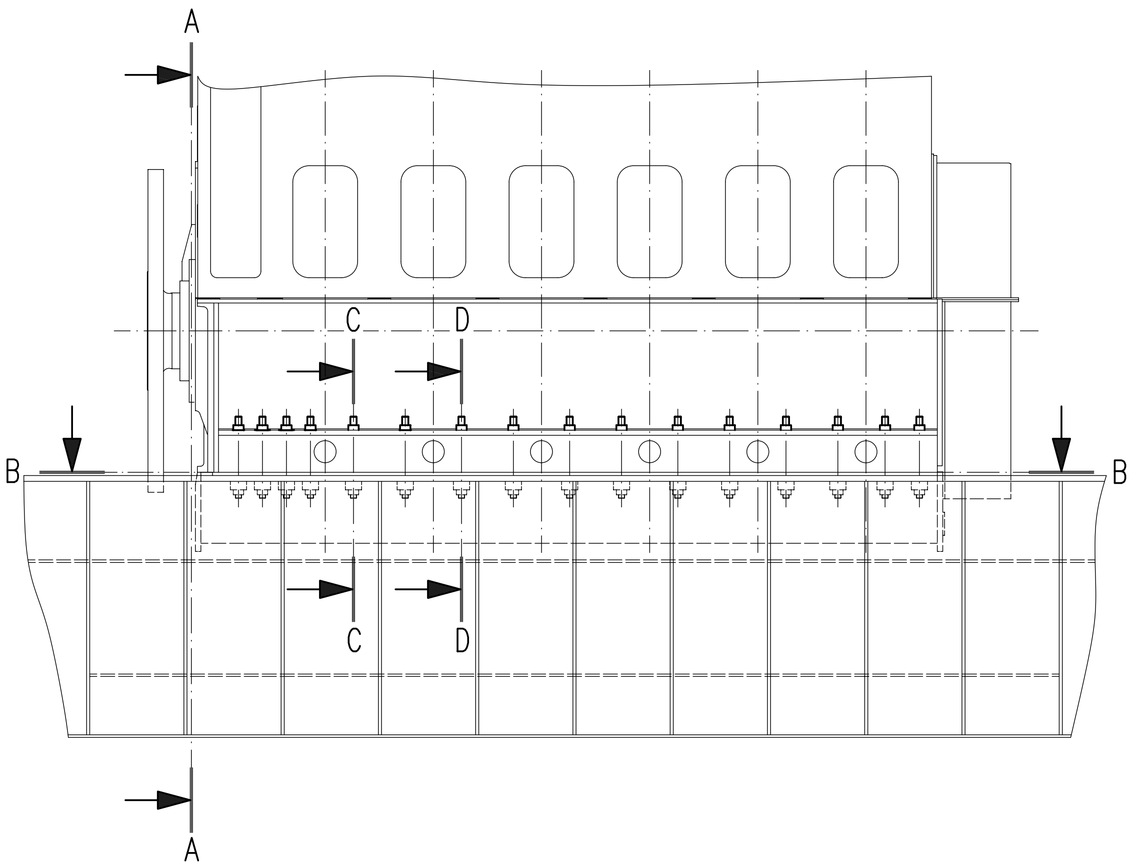
Units mm kg	IDE	Basic Material		Net Weight	
SURFACE PROTECTION SEE GROUP 0344	Made 26.05.2010 jba029 Baumann	Scale 1:14	Size A1	Page 3/3	Material ID
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710	Drawing ID 107.422.463		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 16.07.2010				

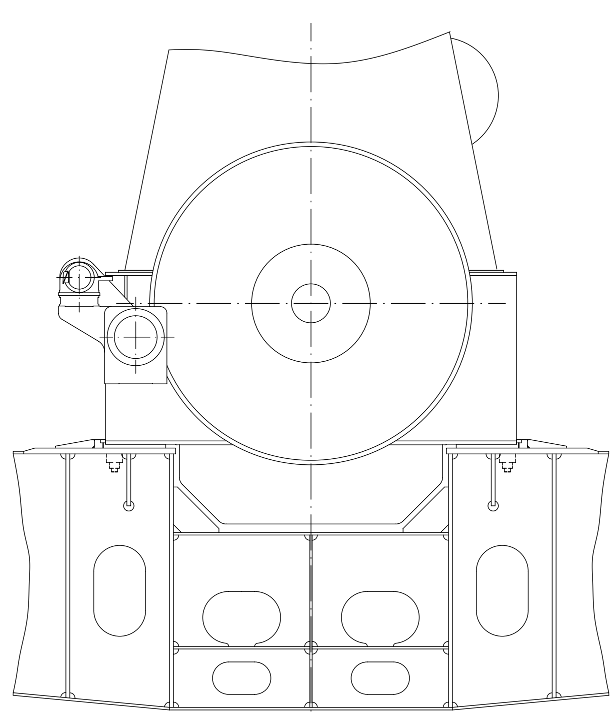
Approved

ISO - ASSEMBLY DRAWING - internal

A-A (1:14)







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness $30\pm^{30}_{5}$.
- Final chock thickness to be determined by shipyard.

107.420.689.200	7 Cyl.	Execution with side stoppers welded type
107.420.689.201	7 Cyl.	Execution with side stoppers flame-cut type

Quantity PER ENGINE 949 (107.420.689.201)	Quantity PER ENGINE 868 (107.420.689.200)	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
1	1	014	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001
4	-	013	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4
-	4	012	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45
26	26	011	107.423.297.001	PIN		107.423.297		0.001
10	10	010	PAAD004345	JOINT DISC		DAAD005525	Rubber750	0.01
1	1	009	107.367.119.001	SEALING PIECE		107.367.119		0.001
36	36	008	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4	1.2
26	26	007	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1
10	10	006	107.422.173.001	CONICAL SOCKET		107.422.173	34CrMo4 SCM 435	7.4
26	26	005	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3
10	10	004	107.422.170.001	ELASTIC BOLT		107.422.170	34CrMo4 SCM 435	7.8
10	10	003	107.422.172.001	SLEEVE		107.422.172	34CrMo4 SCM 435	13.8
36	36	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001

Net Weight: 949 / 868

Material ID: 107.420.689.201 / 107.420.689.200

Free space for lic.

Q-Code XXXXX | Main Drw. H | Standard ISO JIS | Approved

Modif.	Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date
A	EAAD082040	23.06.2010									

WÄRTSILÄ

Product: 7RT-flex48T-D, 7RTA48, 7RTA48T, 7RTA48T-B, 7RTA48T-D

ENGINE SEATING/FOUNDATION
THRUST SLEEVES

Units mm kg	IDE	Basic Material	Net Weight
Made 26.05.2010 jba029 Baumann	Scale 1:10	Size A1	Page 1/3	Material ID
Chkd	Design Group 9710	Drawing ID 107.420.689	Rev. A
Appd 16.07.2010			

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

ASD - ASSEMBLY DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

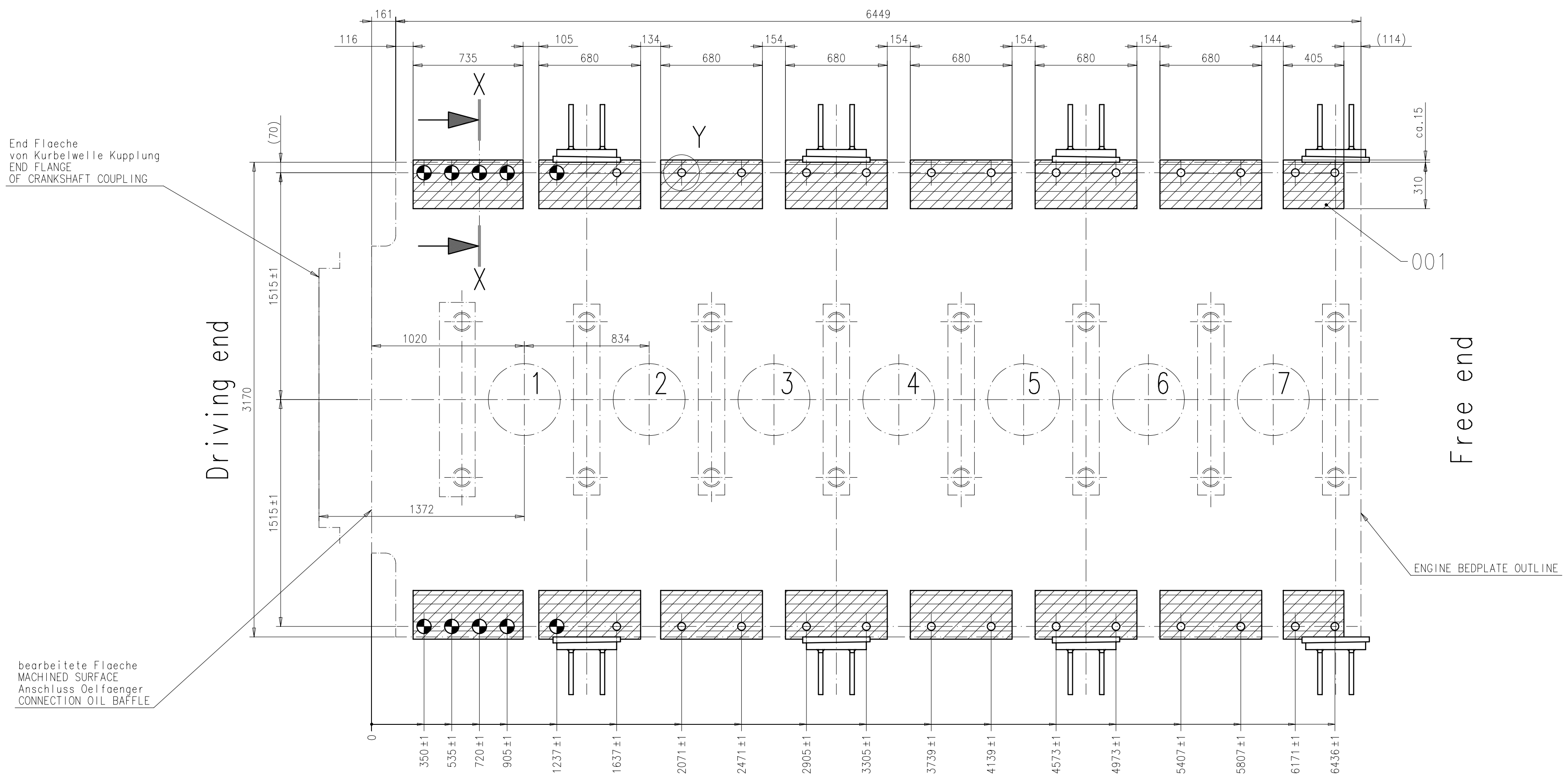


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm²)	(mm)	(cm²)	min. (dm³)	max.
7	4.5	5220	32489	82	195

No. of cyls.	Total No. of holes	No. of thrust sleeves
7	36	10

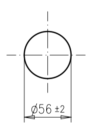
Remarks:

*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm².
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

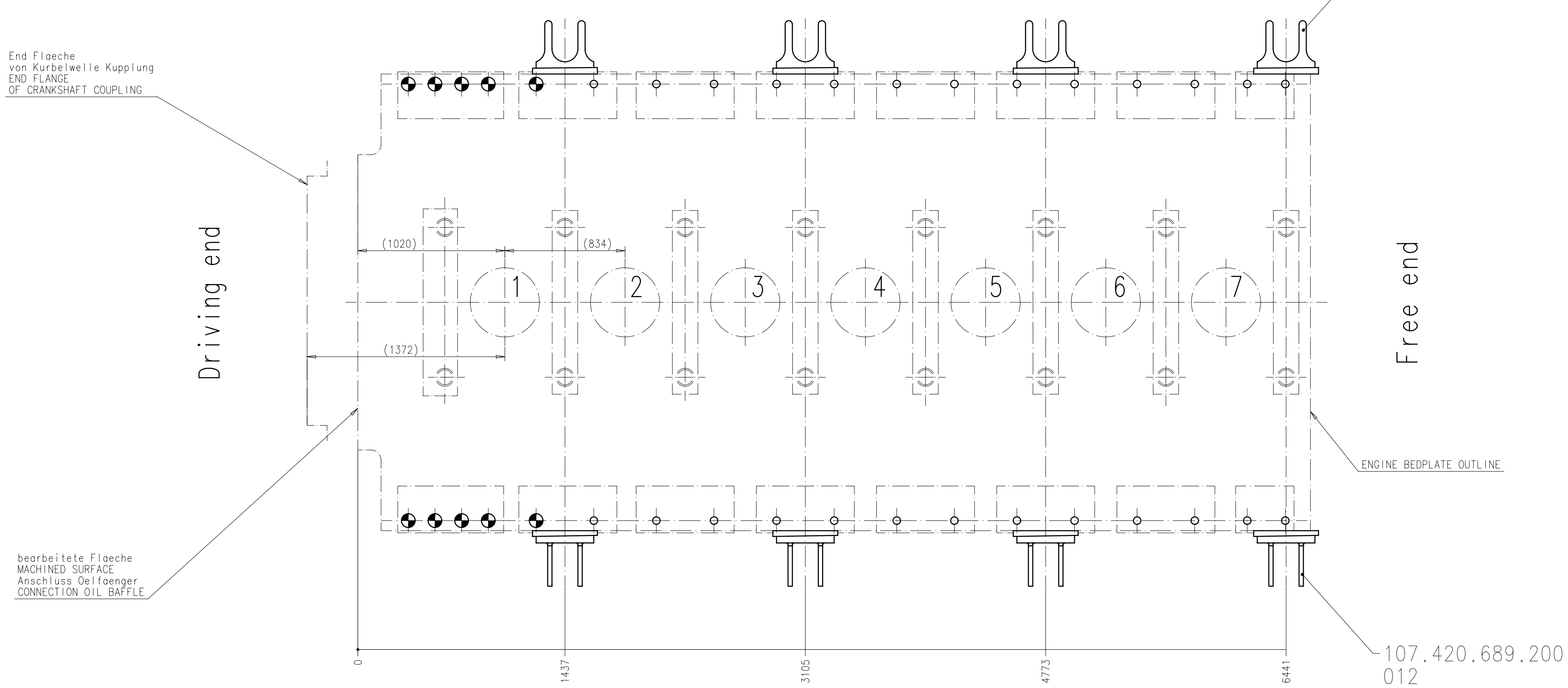
*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

*3) Referring to a standardized chock thickness of 25 up to 60mm.

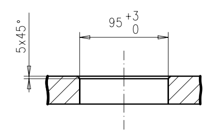
Y 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



X-X 1:5



SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Free space for lic.
Q-Code XXXXX | Main Drw. H
Standard ISO JIS

Modif. A EAAD082040 23.06.2010 (Number / Drawn date)

WÄRTSILÄ

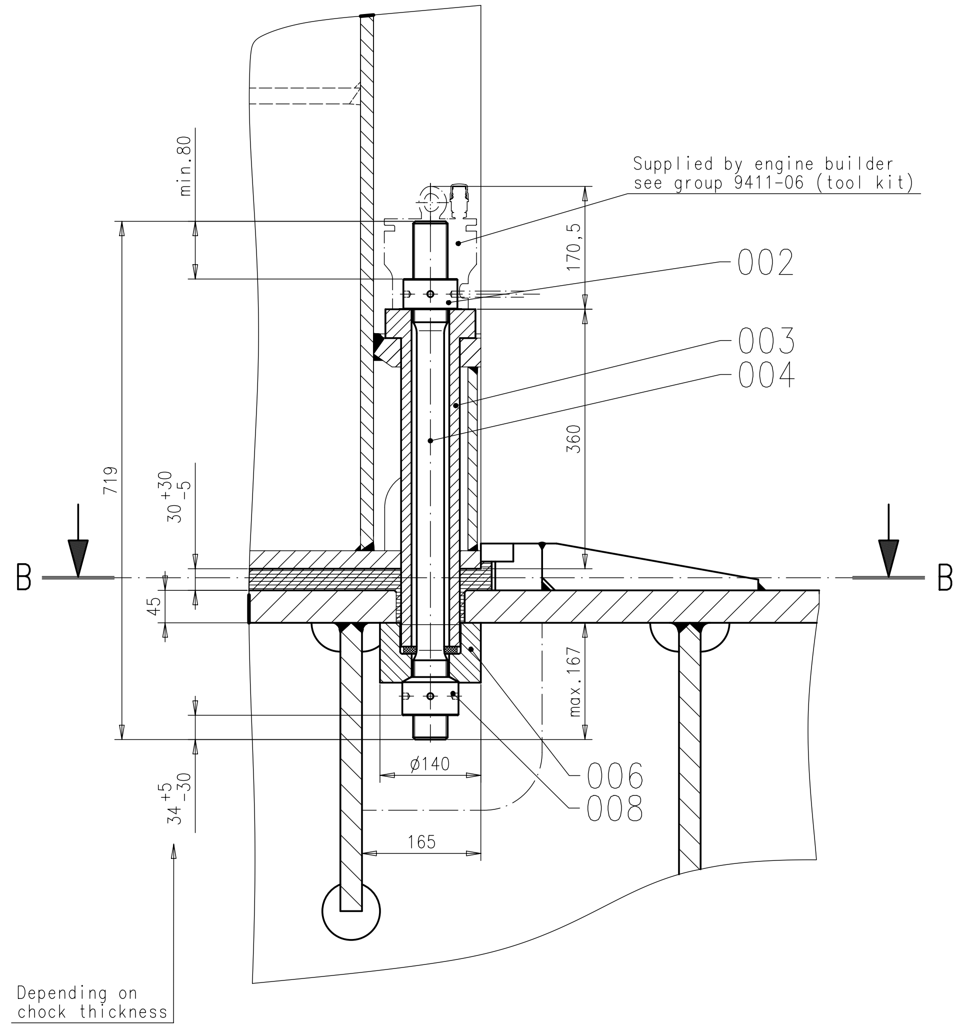
Product: 7RT-flex48T-D, 7RTA48, 7RTA48T, 7RTA48T-B, 7RTA48T-D

ENGINE SEATING/FOUNDATION
THRUST SLEEVES

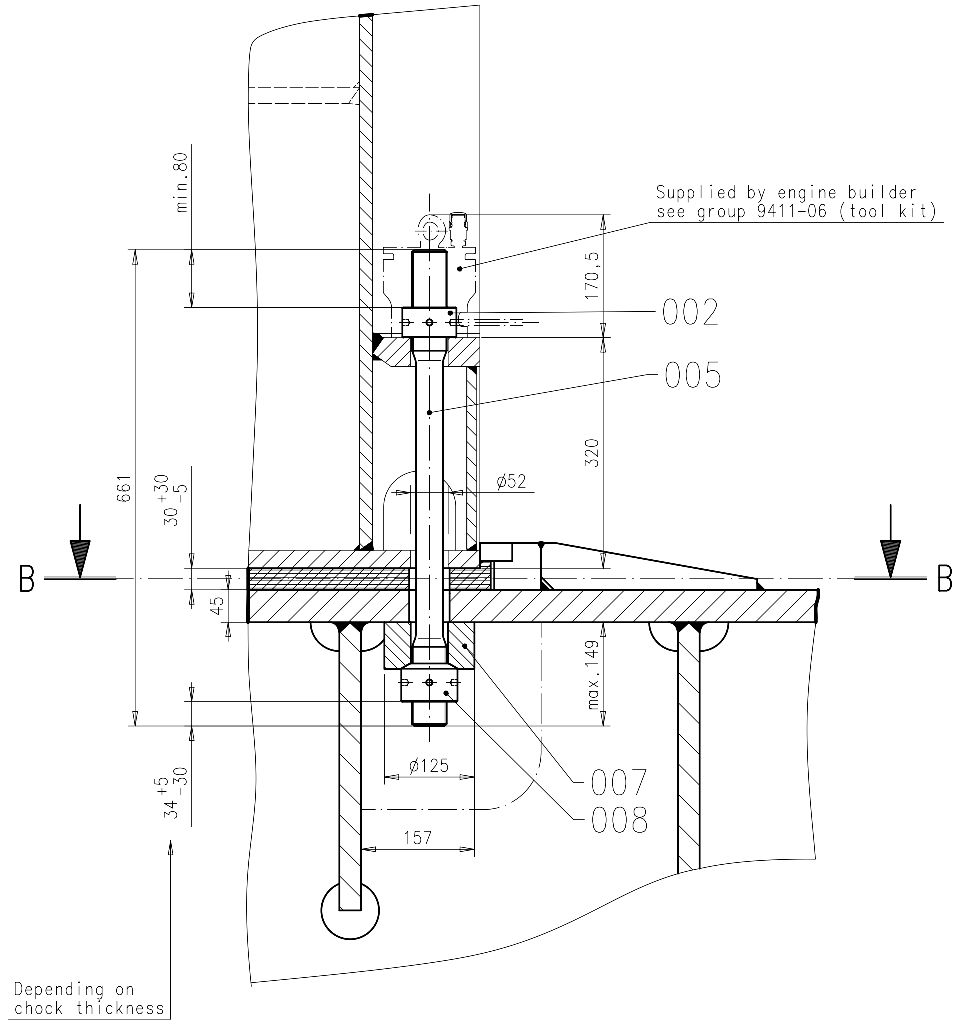
Units mm kg | IDE | Basic Material | Net Weight
Made 26.05.2010 jba029 Baumann | Scale 1:14 | Size A0 | Page 2/3 | Material ID
Chkd | Design Group 9710
Appd 16.07.2010 | Drawing ID 107.420.689 | Rev. A

ASD - ASSEMBLY DRAWING - Internal
Approved

C-C

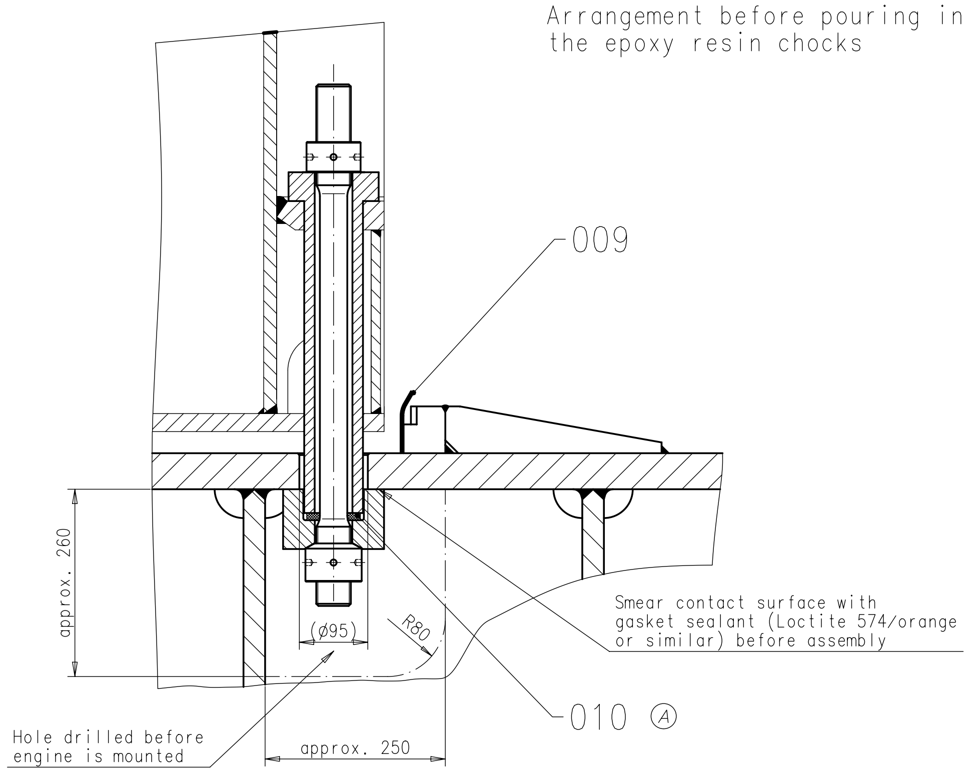


D-D



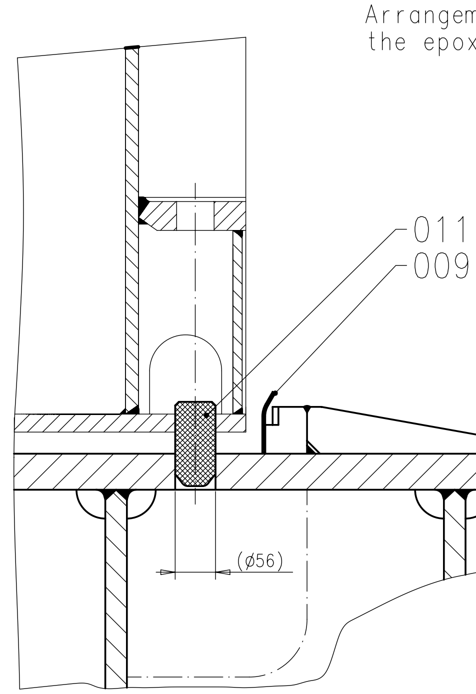
C-C

Arrangement before pouring in the epoxy resin chocks



D-D

Arrangement before pouring in the epoxy resin chocks



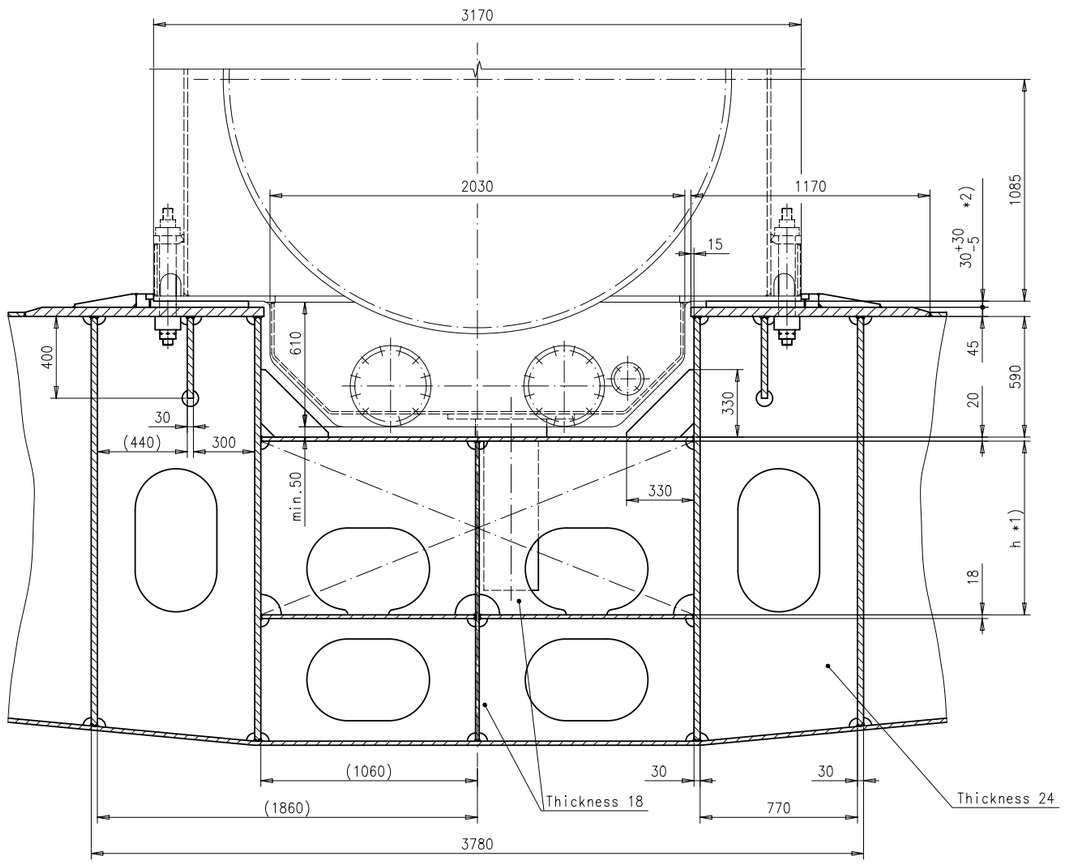
SURFACE PROTECTION SEE GROUP 0344	
TOLERANCING PRINCIPLE ISO8015	
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	

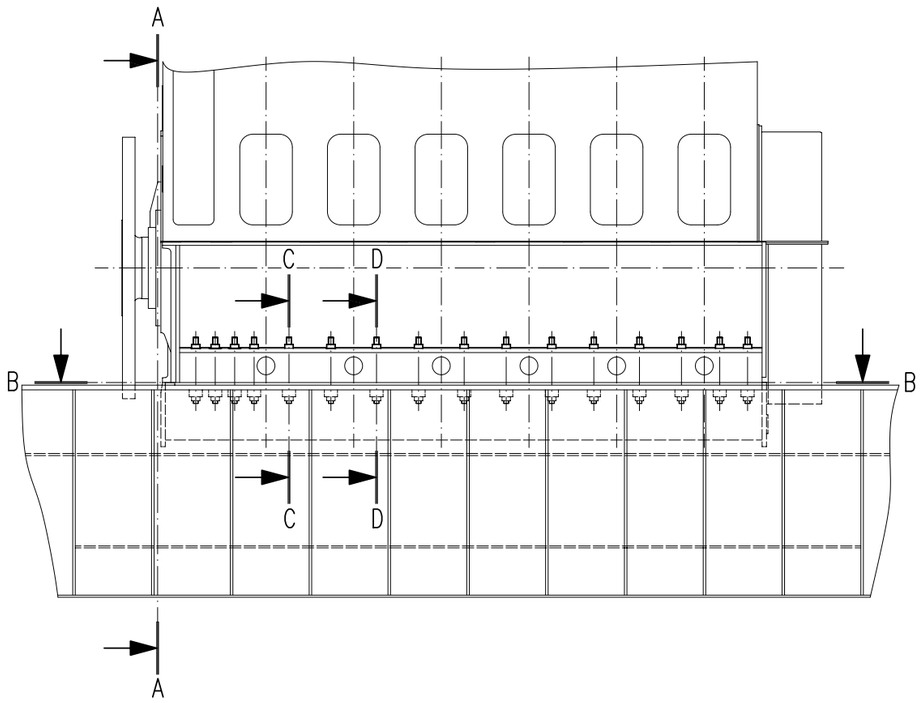
Free space for lic.		Q-Code XXXXX / Standard ISO JIS	Main Drw. H
Modif.	A EAAD082040 23.06.2010 (Number / Drawn date)	Number / Drawn date	Number / Drawn date
WÄRTSILÄ	Product: 7RT-flex48T-D, 7RTA48, 7RTA48T, 7RTA48T-B, 7RTA48T-D	ENGINE SEATING/FOUNDATION THRUST SLEEVES	
Units mm kg	IDE	Basic Material	Net Weight
Made 26.05.2010 jba029 Baumann	Scale 1:14	Size A1	Page 3/3, Material ID
Chkd	Design Group 9710	Drawing ID 107.420.689	Rev. A
Appd 16.07.2010			

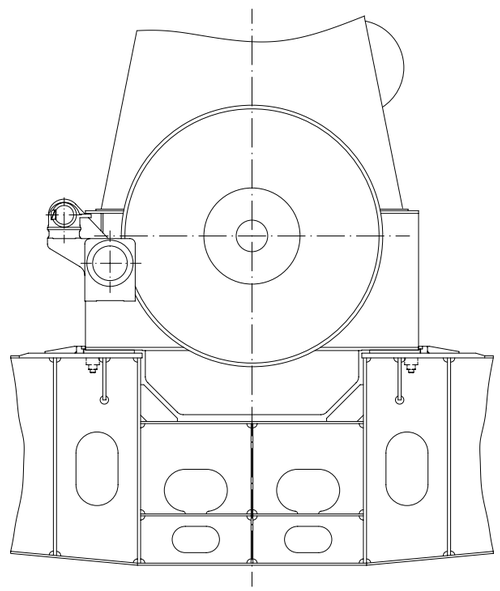
Approved

ASD - ASSEMBLY DRAWING - Internal

A-A (1:14)







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness 30^{+30}_{-5}.
- Final chock thickness to be determined by shipyard.

107.422.464.200	7 Cyl	Execution with side stoppers welded type
107.422.464.201	7 Cyl	Execution with side stoppers flame-cut type

Net Weight 793	Net Weight 711	Quantity PER ENGINE	SEQ NO	Material ID	Material Name / Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight OR./NET
1	1	1	011	PAAD008160	FITTING INSTRUCTIONS	DAAD006574		0.001
4	-	4	010	107.422.180.200	ENGINE SIDE STOPPER	107.422.180		65.4
-	4	-	009	107.376.678.200	ENGINE SIDE STOPPER	107.376.678		45
26	26	26	008	107.423.297.001	PIN	107.423.297		0.001
1	1	1	007	107.367.119.001	SEALING PIECE	107.367.119		0.001
36	36	36	006	107.246.051.001	SPHERICAL ROUND NUT M48	107.246.051	34CrMo4	1.2
36	36	36	005	107.422.174.001	CONICAL SOCKET	107.422.174	34CrMo4 SCM 435	5.1
26	26	26	004	107.422.171.001	ELASTIC BOLT	107.422.171	34CrMo4 SCM 435	7.3
10	10	10	003	107.422.461.001	FITTED STUD	107.422.461	34CrMo4 SCM 435	8.2
36	36	36	002	107.246.021.001	ROUND NUT M48	107.246.021		0.9
1	1	1	001	107.398.394.500	EPOXY RESIN	107.398.394		0.001

Approved

107.422.464.201 / 107.422.464.200 — Material ID

Free space for I.C.

Q-Code XXXXX — Standard ISO JIS — Main Drw. H

Modif. | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date

A | EAAD082040 | 23.06.2010

WÄRTSILÄ

Product: 7RT-flex48T-D, 7RTA48, 7RTA48T, 7RTA48T-B, 7RTA48T-D

ENGINE SEATING/FOUNDATION
FITTED STUDS

Units mm kg | IDE | Basic Material | Net Weight

SURFACE PROTECTION SEE GROUP 0344	Made	26.05.2010 jba029 Baumann	Scale 1:10	Size A1	Page 1/3	Material ID
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710	Drawing ID 107.422.464		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	16.07.2010				

ISSUED DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

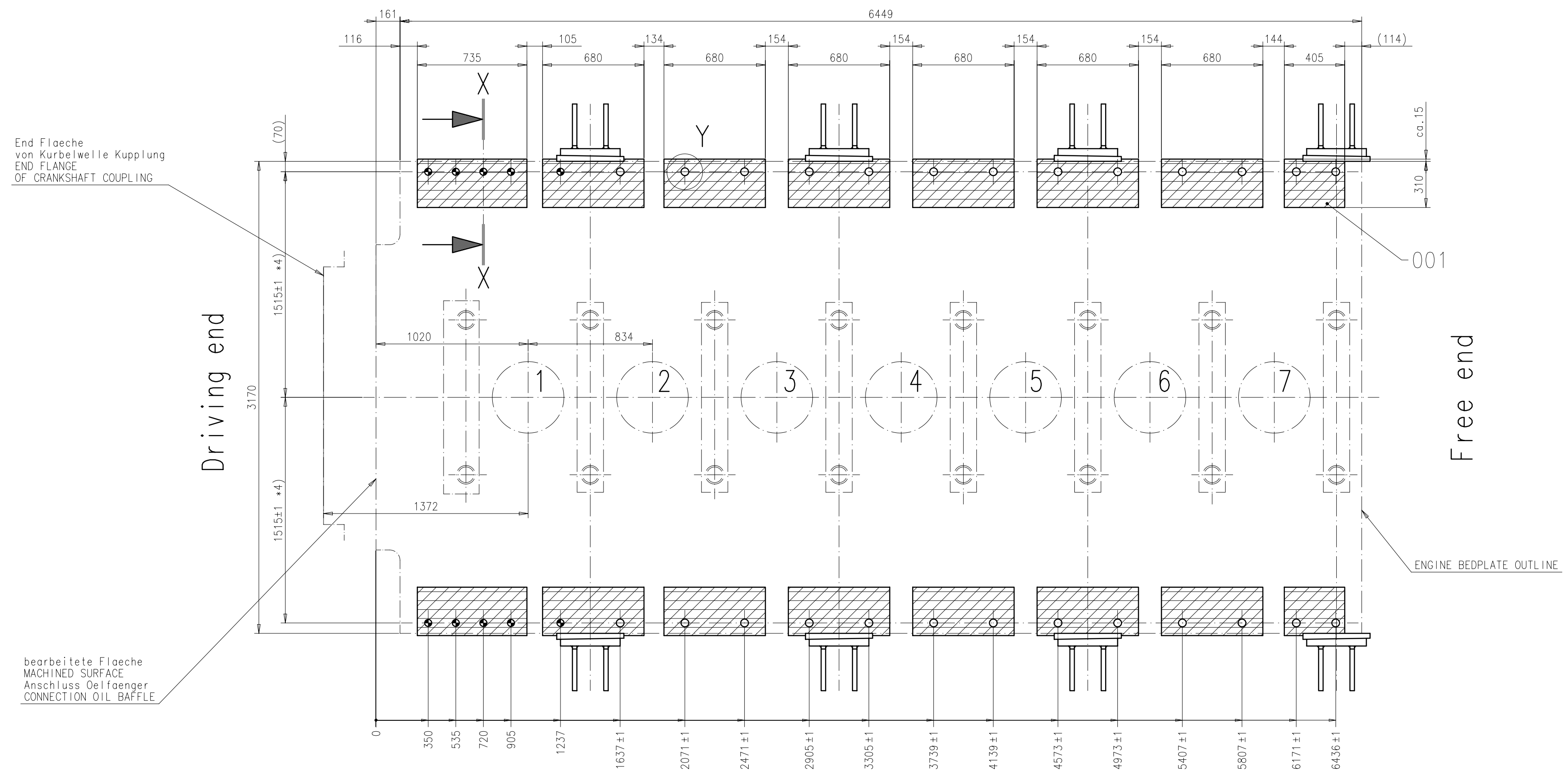


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
7	4.5	5220	32489	82	195

No. of cyls.	Total No. of holes	No. of fitted studs
7	36	10

Remarks:

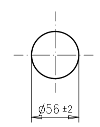
*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm^2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

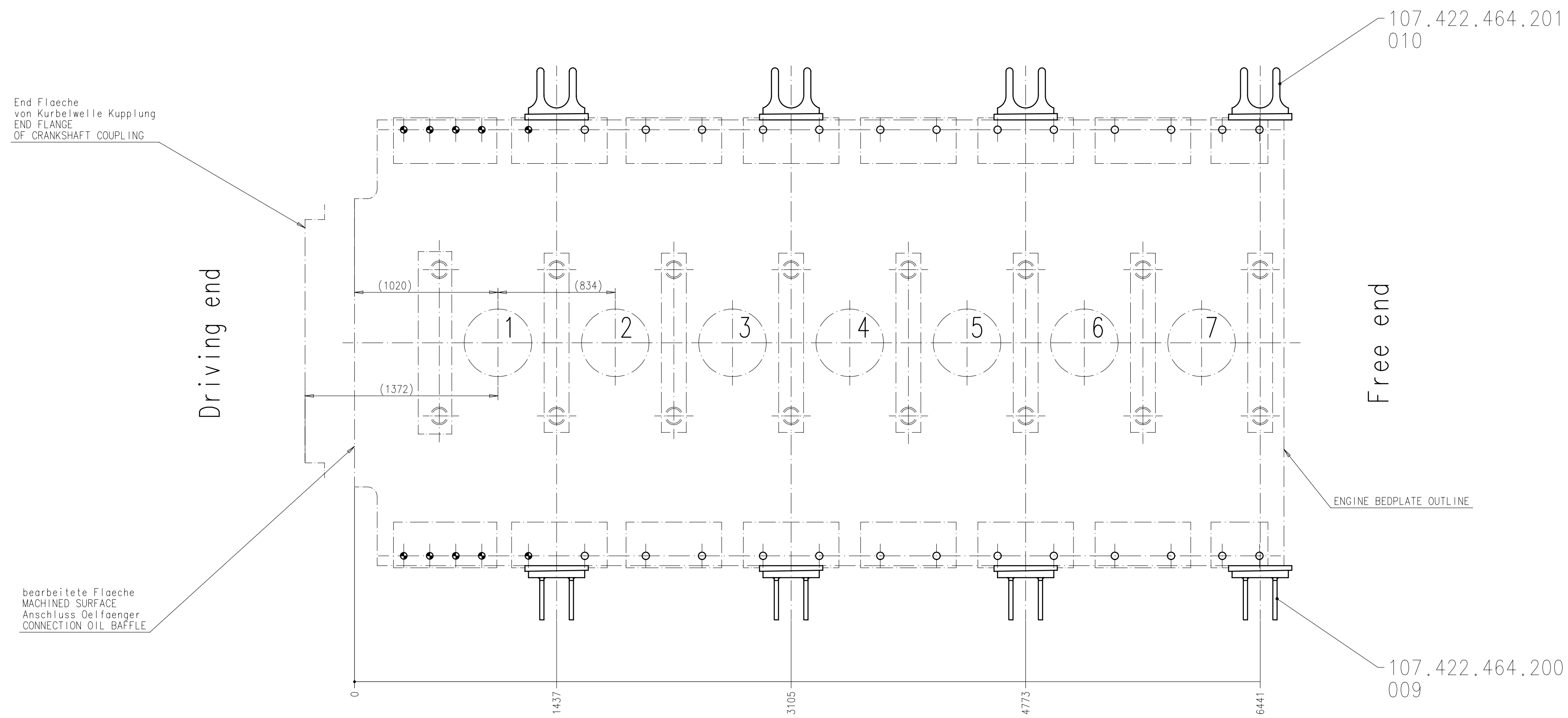
*3) Referring to a standardized chock thickness of 25 up to 60mm.

*4) Tolerance does not apply for fitted studs.

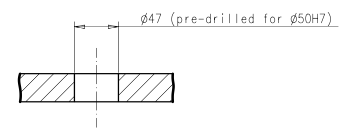
Y 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



X-X 1:5



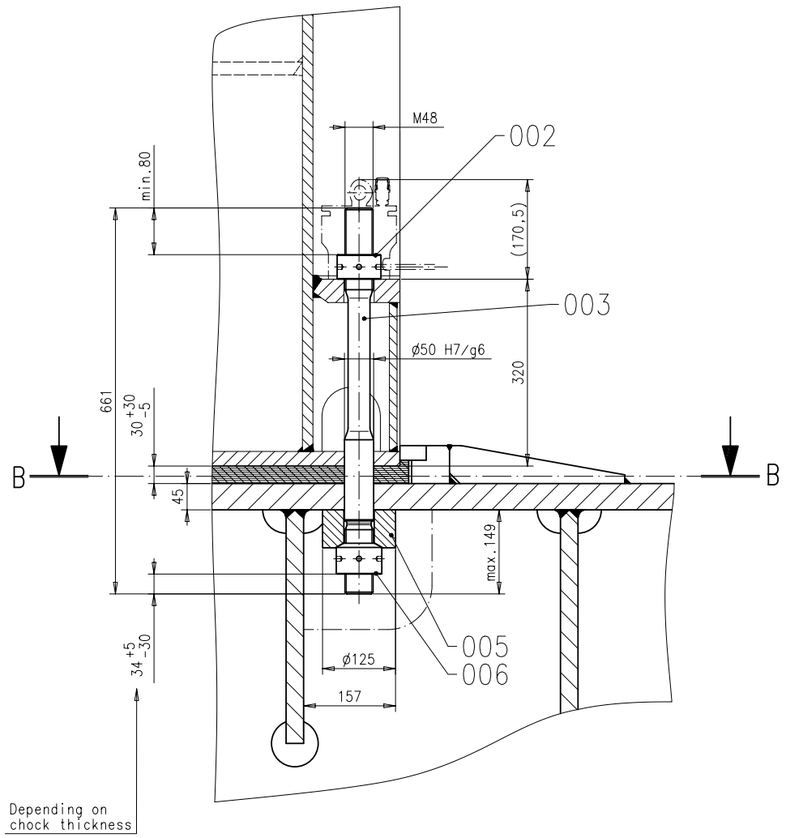
Free space for lic.		Q-Code XXXXX / Standard ISO JIS	Main Drw. H
Modif.	A EAAD082040 23.06.2010 (Number / Drawn date)	Number / Drawn date	Number / Drawn date
WÄRTSILÄ	Product: 7RT-flex48T-D, 7RTA48, 7RTA48T, 7RTA48T-B, 7RTA48T-D	ENGINE SEATING/FOUNDATION FITTED STUDS	
Units mm kg	IDE	Basic Material	Net Weight
Made 26.05.2010 jba029 Baumann	Scale 1:14	Size A0 / Page 2/3	Material ID
Chkd	Design Group 9710	Drawing ID 107.422.464	Rev. A
Appd 16.07.2010			

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

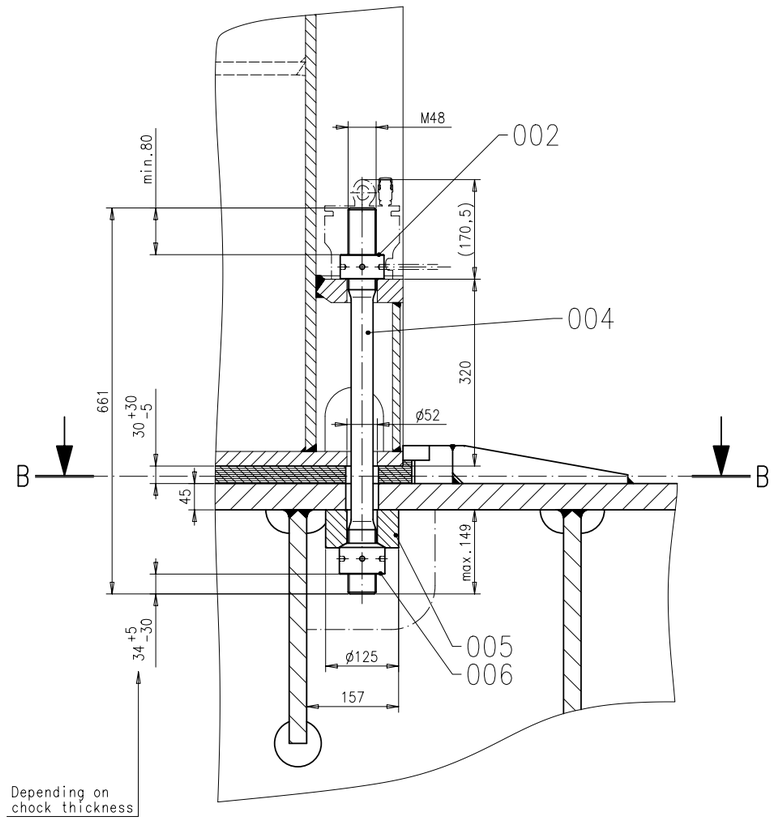
Approved

ASD - ASSEMBLY DRAWING - Internal

C–C

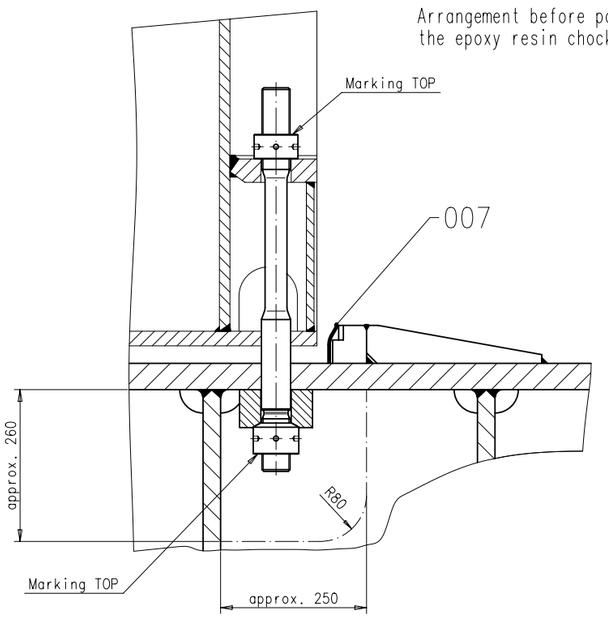


D–D



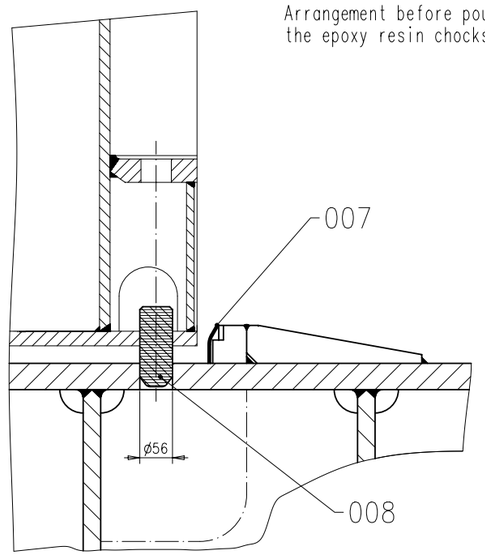
C–C

Arrangement before pouring the epoxy resin chocks



D–D

Arrangement before pouring the epoxy resin chocks



Free space for I.C.							Q-Code XXXXX	Main Drw.	
							Standard ISO JIS	H	
Modif.	A	EAAD082040	23.06.2010						
	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	

WÄRTSILÄ

Product: 7RT-flex48T-D, 7RTA48, 7RTA48T, 7RTA48T-B, 7RTA48T-D

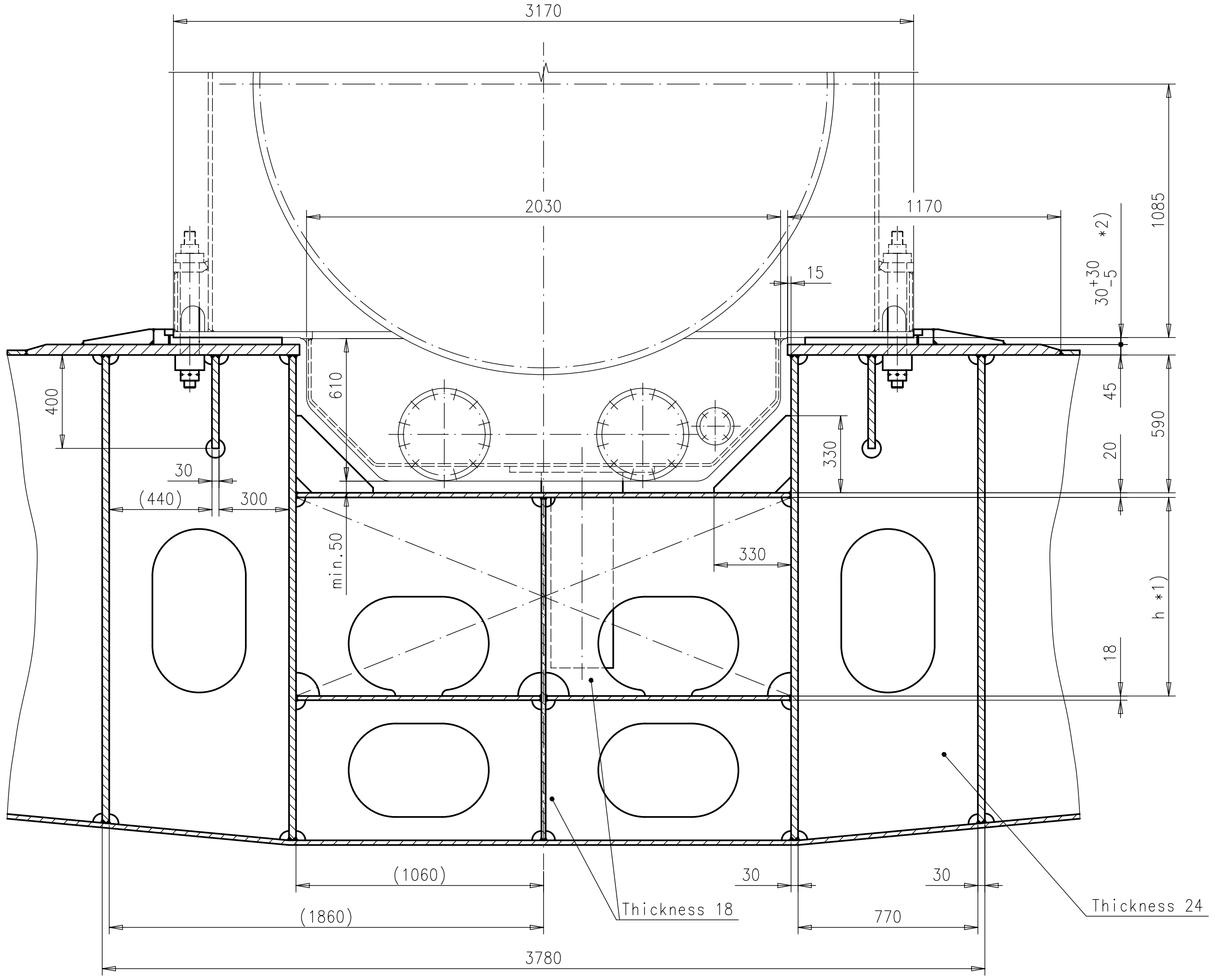
ENGINE SEATING/FOUNDATION
FITTED STUDS

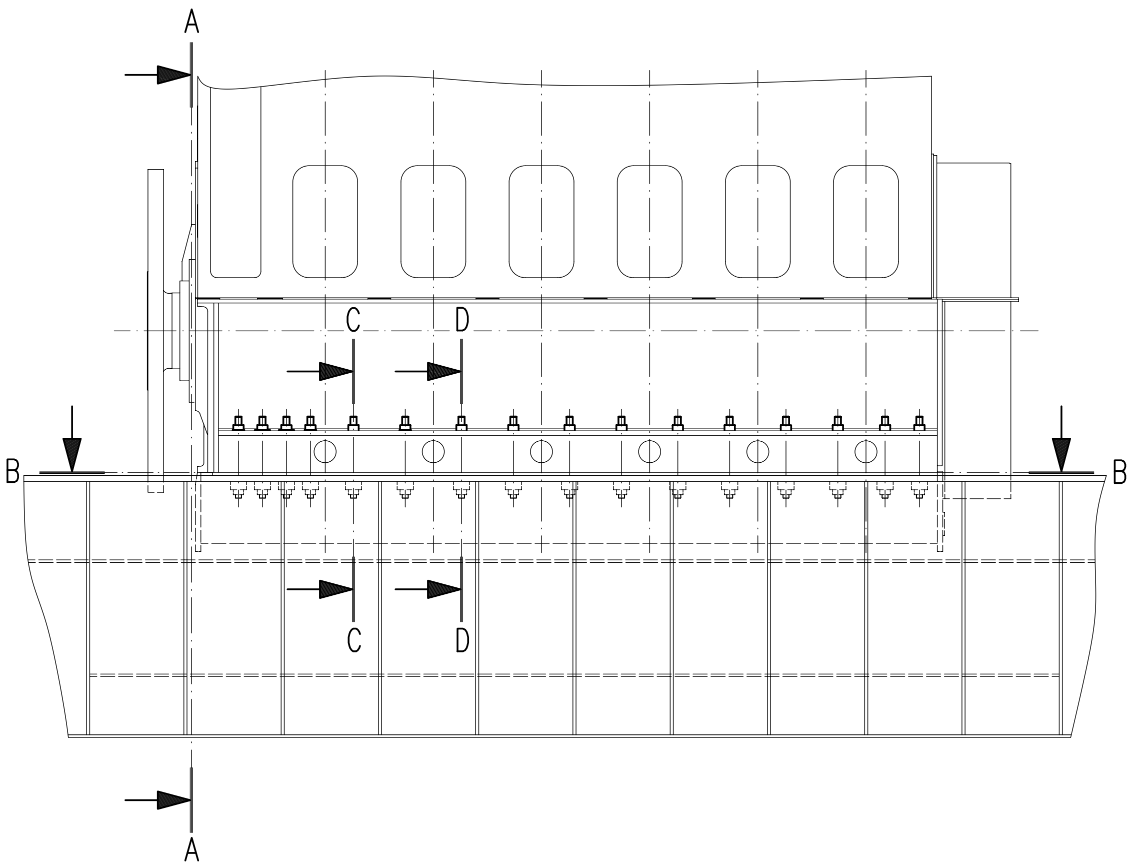
Units mm kg	IDE	Basic Material		Net Weight	
SURFACE PROTECTION SEE GROUP 0344	Made 26.05.2010 jba029 Baumann	Scale 1:14	Size A1	Page 3/3	Material ID
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710	Drawing ID 107.422.464		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 16.07.2010				

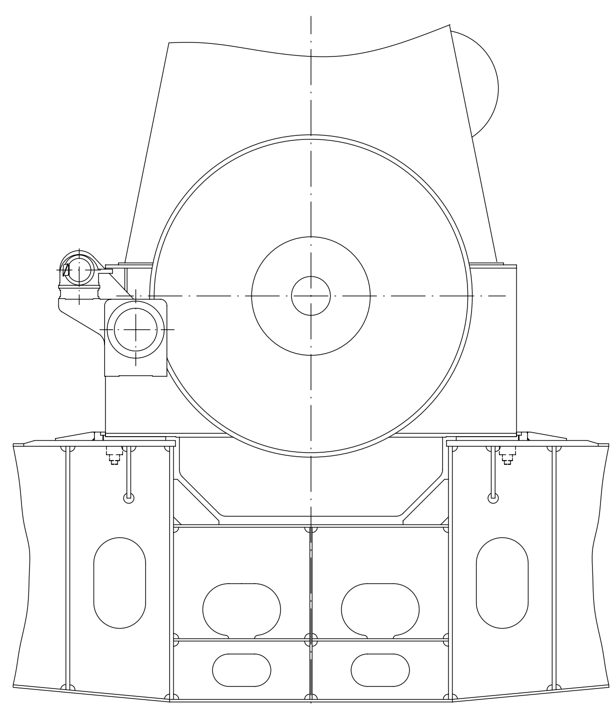
Approved

ASSIGNED DRAWING - internal

A-A (1:14)







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness 30±$^{30}_{5}$.
- Final chock thickness to be determined by shipyard.

107.420.691.200	8 Cyl.	Execution with side stoppers welded type
107.420.691.201	8 Cyl.	Execution with side stoppers flame-cut type

Quantity PER ENGINE (Net Weight 1007)	Quantity PER ENGINE (Net Weight 926)	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
1	1	014	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001
4	-	013	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4
-	4	012	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45
30	30	011	107.423.297.001	PIN		107.423.297		0.001
10	10	010	PAAD004345	JOINT DISC		DAAD005525	Rubber750	0.01
1	1	009	107.367.119.001	SEALING PIECE		107.367.119		0.001
40	40	008	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4	1.2
30	30	007	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1
10	10	006	107.422.173.001	CONICAL SOCKET		107.422.173	34CrMo4 SCM 435	7.4
30	30	005	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3
10	10	004	107.422.170.001	ELASTIC BOLT		107.422.170	34CrMo4 SCM 435	7.8
10	10	003	107.422.172.001	SLEEVE		107.422.172	34CrMo4 SCM 435	13.8
40	40	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001

Material ID: 107.420.691.201 / 107.420.691.200

Free space for lic. | Q-Code XXXXX | Main Drw. H | Standard ISO JIS | Approved

Modif.	Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date
A	EAAD082040	23.06.2010									

WÄRTSILÄ

Product: 8RT-flex48T-D, 8RTA48, 8RTA48T, 8RTA48T-B, 8RTA48T-D

ENGINE SEATING/FOUNDATION
THRUST SLEEVES

Units mm kg	IDE		Basic Material		Net Weight
Made	*26.05.2010 jba029 Baumann*	Scale 1:10	Size A1	Page 1/3	Material ID
Chkd		Design Group 9710	Drawing ID 107.420.691		Rev. A
Appd	*16.07.2010*				

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

ASD - ASSEMBLY DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

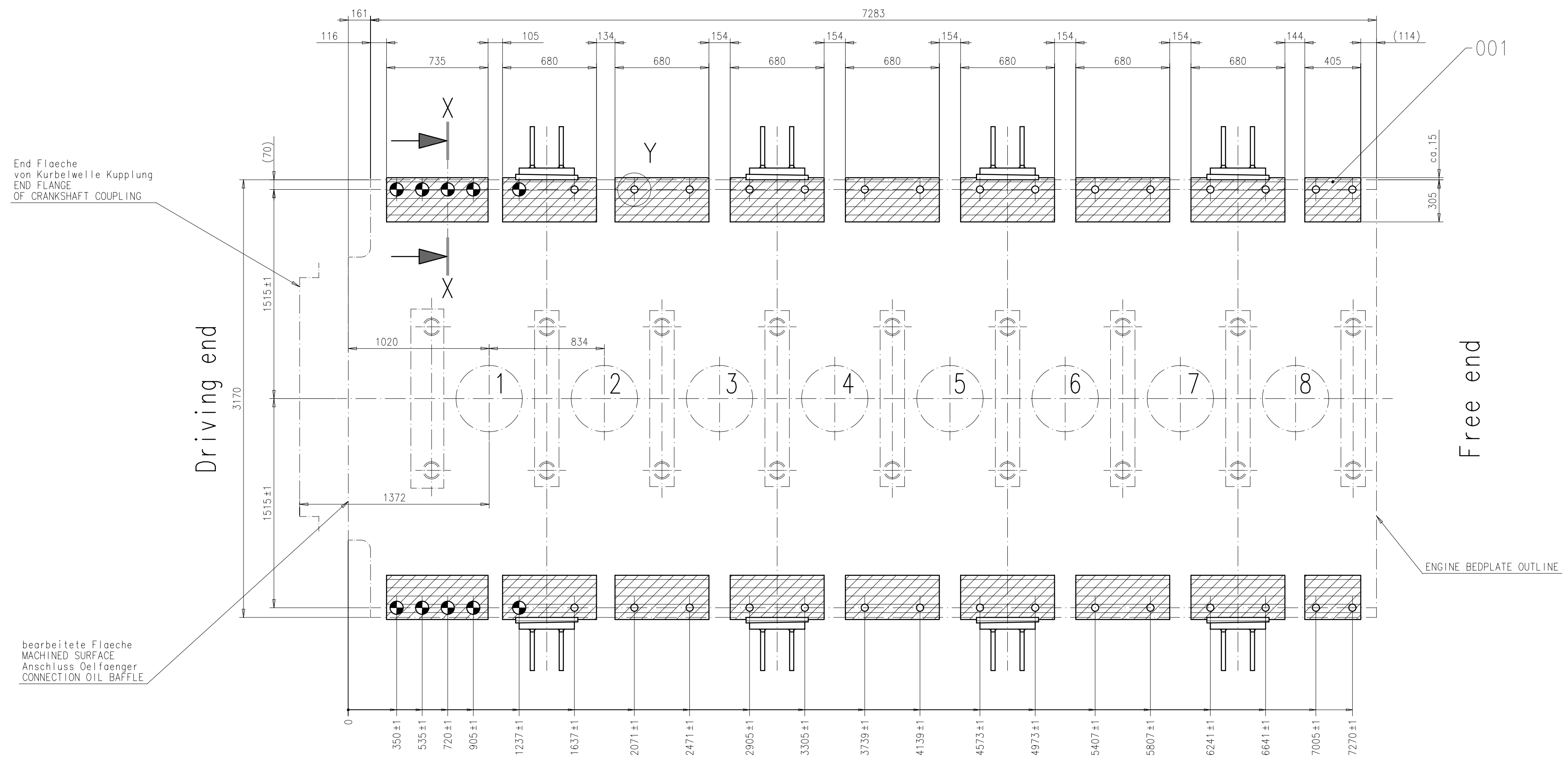


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
8	4.5	5900	36213	91	218

No. of cyls.	Total No. of holes	No. of thrust sleeves
8	40	10

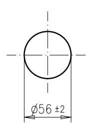
Remarks:

*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm^2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

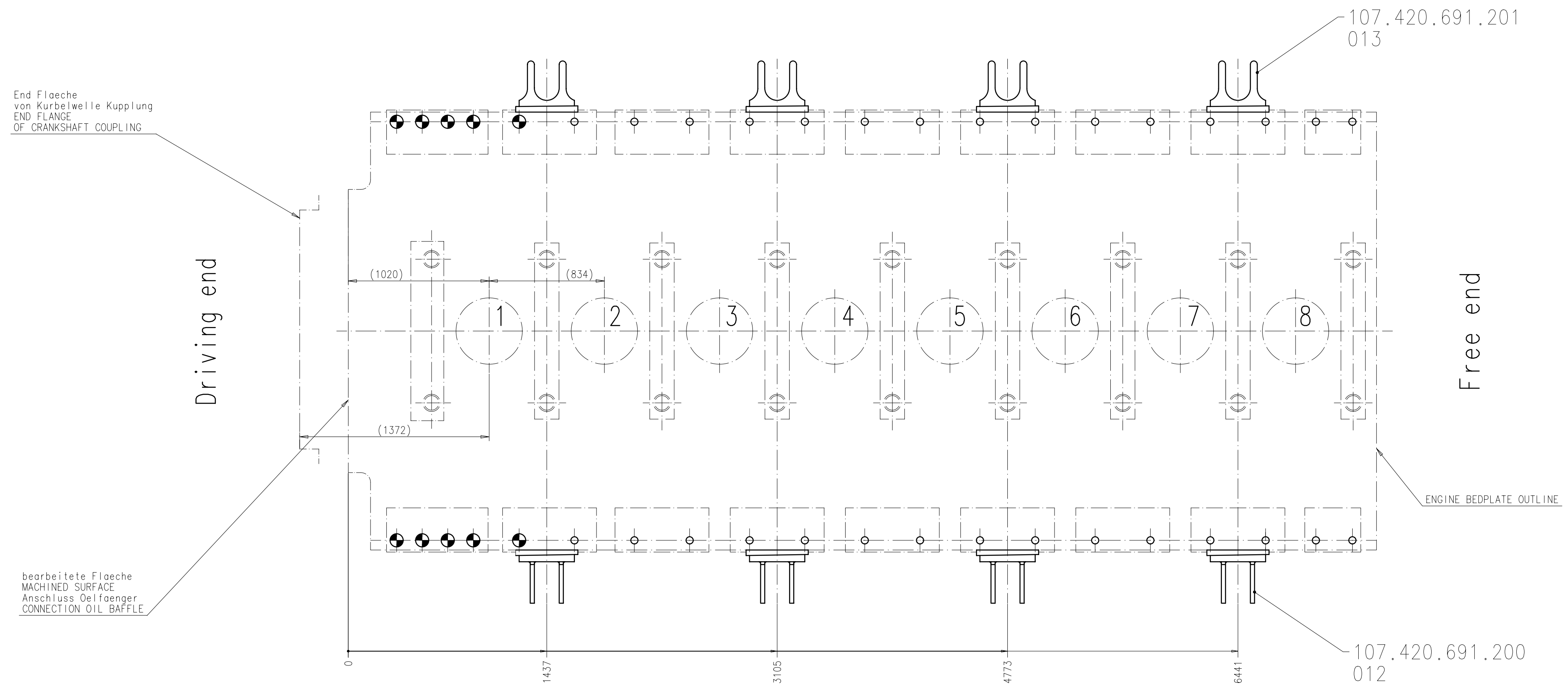
*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

*3) Referring to a standardized chock thickness of 25 up to 60mm.

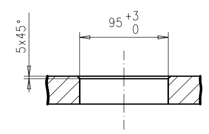
Y 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



X-X 1:5



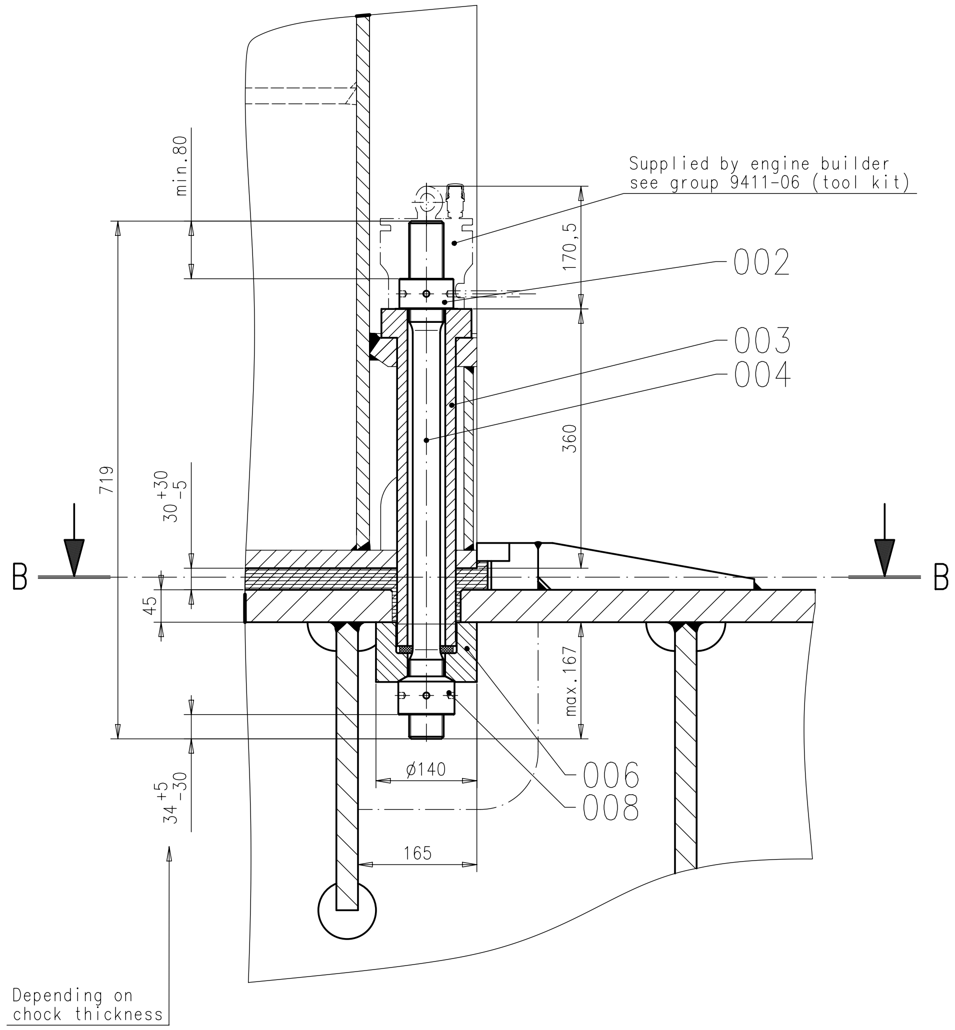
SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Free space for lic.		Q-Code XXXXX	Main Drw.
		Standard ISO JIS	H
Modif.	A EAAD082040 23.06.2010 (Number / Drawn date)		
WÄRTSILÄ	Product: 8RT-flex48T-D, 8RTA48, 8RTA48T, 8RTA48T-B, 8RTA48T-D	ENGINE SEATING/FOUNDATION THRUST SLEEVES	
Units mm kg	IDE	Basic Material	Net Weight
Made	26.05.2010 jba029 Baumann	Scale 1:14	Size A0, Page 2/3, Material ID
Chkd		Design Group 9710	Drawing ID 107.420.691, Rev. A
Appd	16.07.2010		

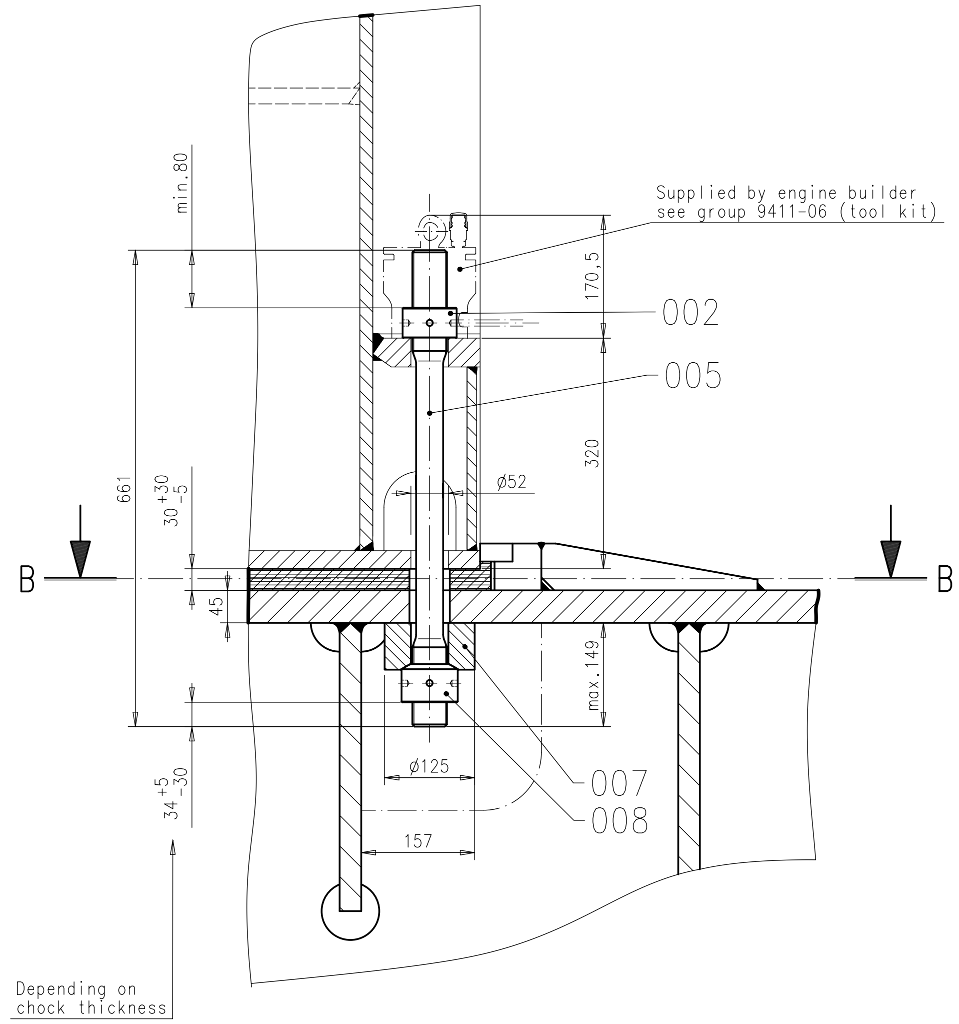
Approved

ASD - ASSEMBLY DRAWING - Internal

C-C

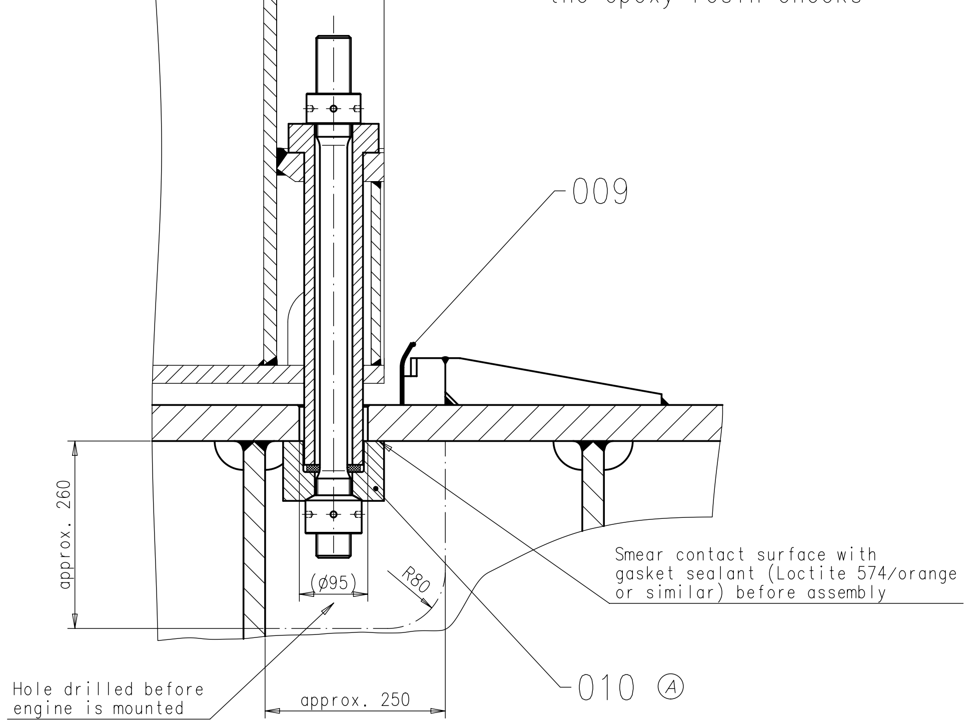


D-D



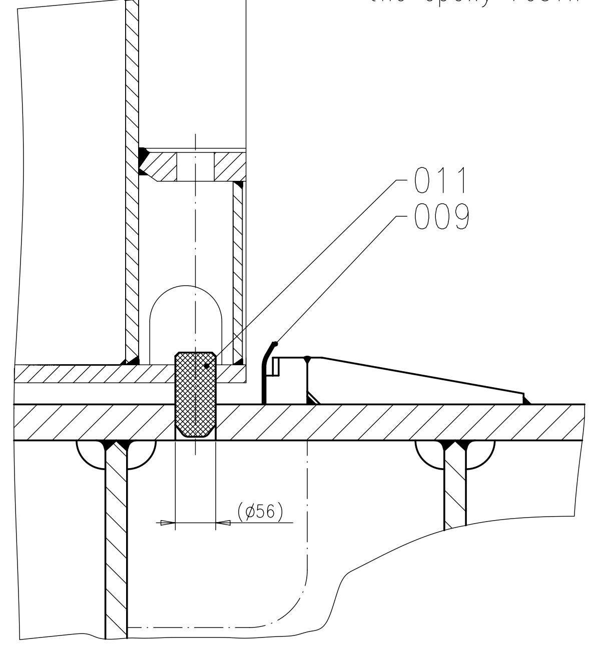
C-C

Arrangement before pouring in
the epoxy resin chocks



D-D

Arrangement before pouring in
the epoxy resin chocks

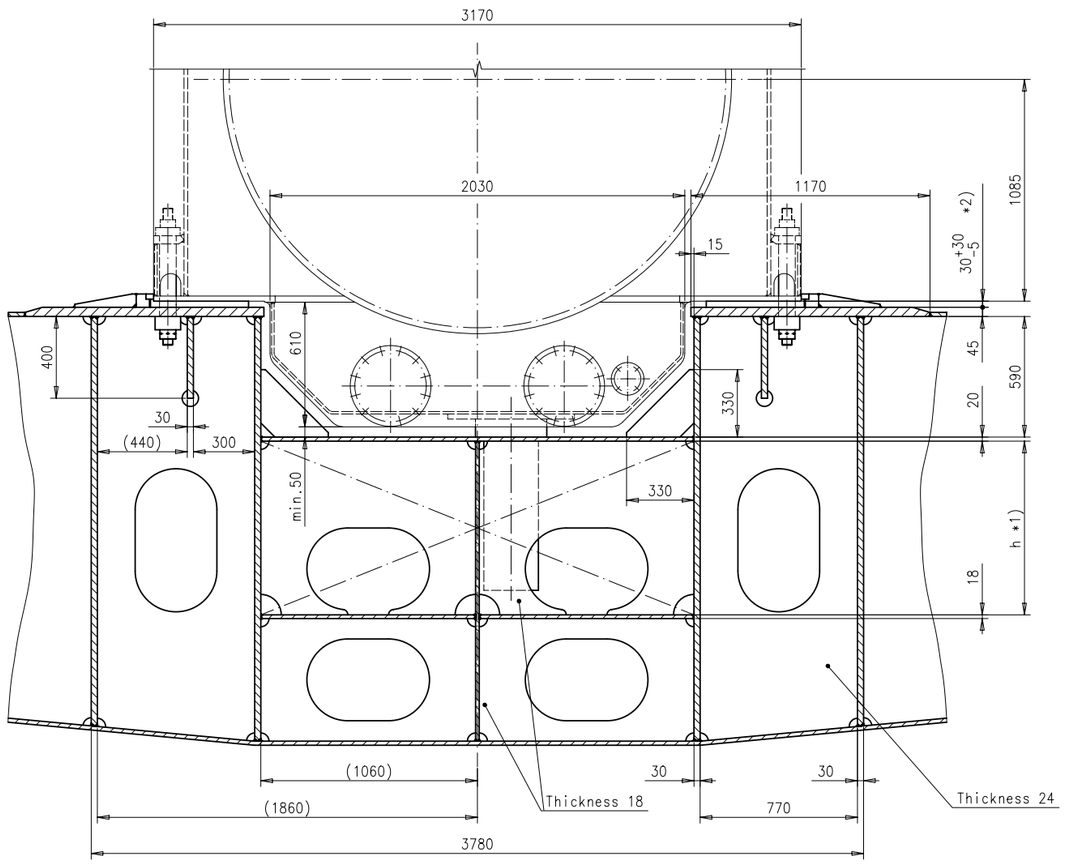


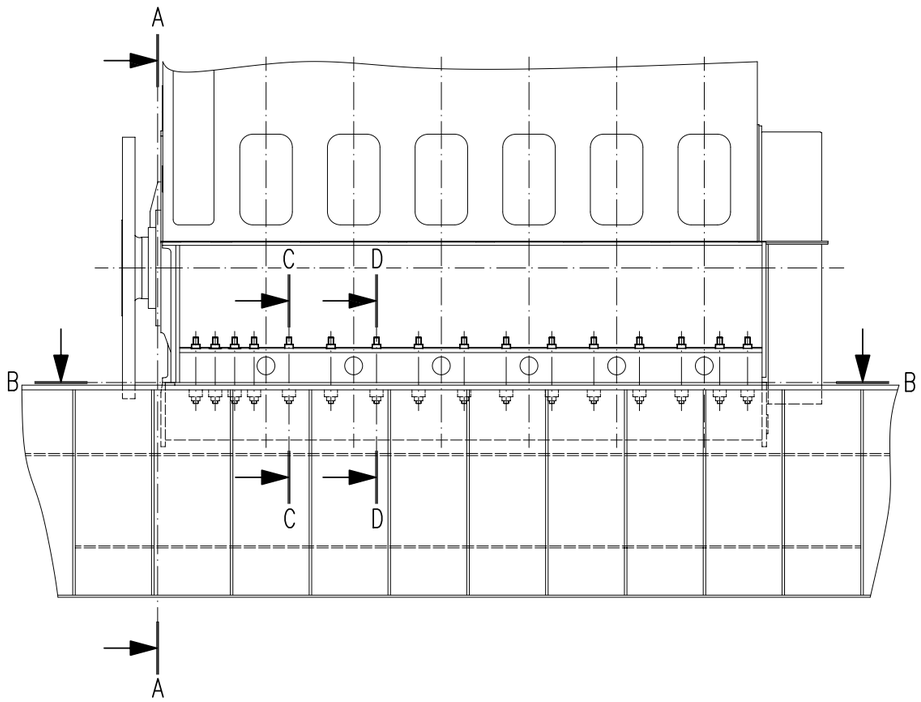
Free space for lic.				Q-Code XXXXX	Standard ISO JIS	Main Drw. H
Modif.	(A) EAAD082040	23.06.2010	Number / Drawn date	Number / Drawn date	Number / Drawn date	
WÄRTSILÄ	Product: 8RT-flex48T-D, 8RTA48, 8RTA48T, 8RTA48T-B, 8RTA48T-D	ENGINE SEATING/FOUNDATION THRUST SLEEVES				
Units mm kg	IDE		Basic Material		Net Weight	
Made	26.05.2010 jba029 Baumann	Scale 1:14	Size A1	Page 3/3	Material ID	
Chkd		Design Group 9710	Drawing ID 107.420.691		Rev. A	
Appd	16.07.2010					

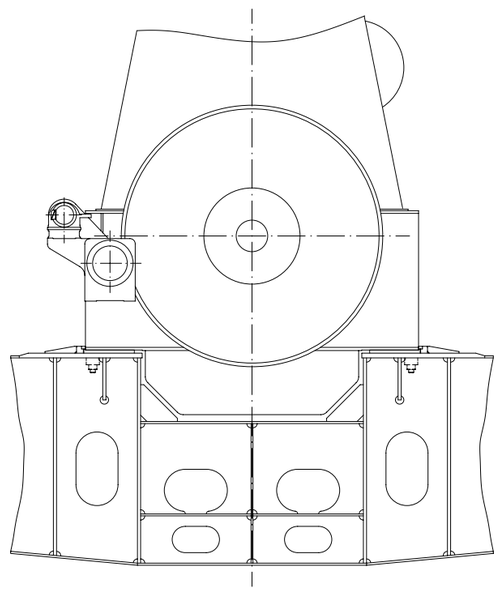
SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Approved
ASD - ASSEMBLY DRAWING - Internal

A-A (1:14)







Remarks:

*1) Height to be determined by shipyard. For dimensions layout of lub. oil drain tank and drains refer to design group 9722.

*2) Chock thickness 30^{+30}_{-5}.
- Final chock thickness to be determined by shipyard.

107.422.465.200	8 Cyl	Execution with side stoppers welded type
107.422.465.201	8 Cyl	Execution with side stoppers flame-cut type

Net Weight 851 769

Quantity PER ENGINE		SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET	Approved
1	1	011	PAAD008160	FITTING INSTRUCTIONS		DAAD006574		0.001	
4	-	010	107.422.180.200	ENGINE SIDE STOPPER		107.422.180		65.4	
-	4	009	107.376.678.200	ENGINE SIDE STOPPER		107.376.678		45	
30	30	008	107.423.297.001	PIN		107.423.297		0.001	
1	1	007	107.367.119.001	SEALING PIECE		107.367.119		0.001	
40	40	006	107.246.051.001	SPHERICAL ROUND NUT M48		107.246.051	34CrMo4	1.2	
40	40	005	107.422.174.001	CONICAL SOCKET		107.422.174	34CrMo4 SCM 435	5.1	
30	30	004	107.422.171.001	ELASTIC BOLT		107.422.171	34CrMo4 SCM 435	7.3	
10	10	003	107.422.461.001	FITTED STUD		107.422.461	34CrMo4 SCM 435	8.2	
40	40	002	107.246.021.001	ROUND NUT	M48	107.246.021		0.9	
1	1	001	107.398.394.500	EPOXY RESIN		107.398.394		0.001	

107.422.465.201 / 107.422.465.200 — Material ID

Free space for I.C.

Q-Code XXXXX

Standard ISO JIS

Main Drw. H

Modif. | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date

A | EAAD082040 | 23.06.2010

WÄRTSILÄ

Product: 8RT-flex48T-D, 8RTA48, 8RTA48T, 8RTA48T-B, 8RTA48T-D

ENGINE SEATING/FOUNDATION
FITTED STUDS

Units mm kg | IDE | Basic Material | Net Weight

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Made 26.05.2010 jba029 Baumann
Chkd
Appd 16.07.2010

Scale 1:10 | Size A1 | Page 1/3 | Material ID

Design Group 9710

Drawing ID 107.422.465 | Rev. A

ISO - ISSUED DRAWING - Internal

B-B CHOCKING AND DRILLING PLAN FOR THRUST SLEEVE

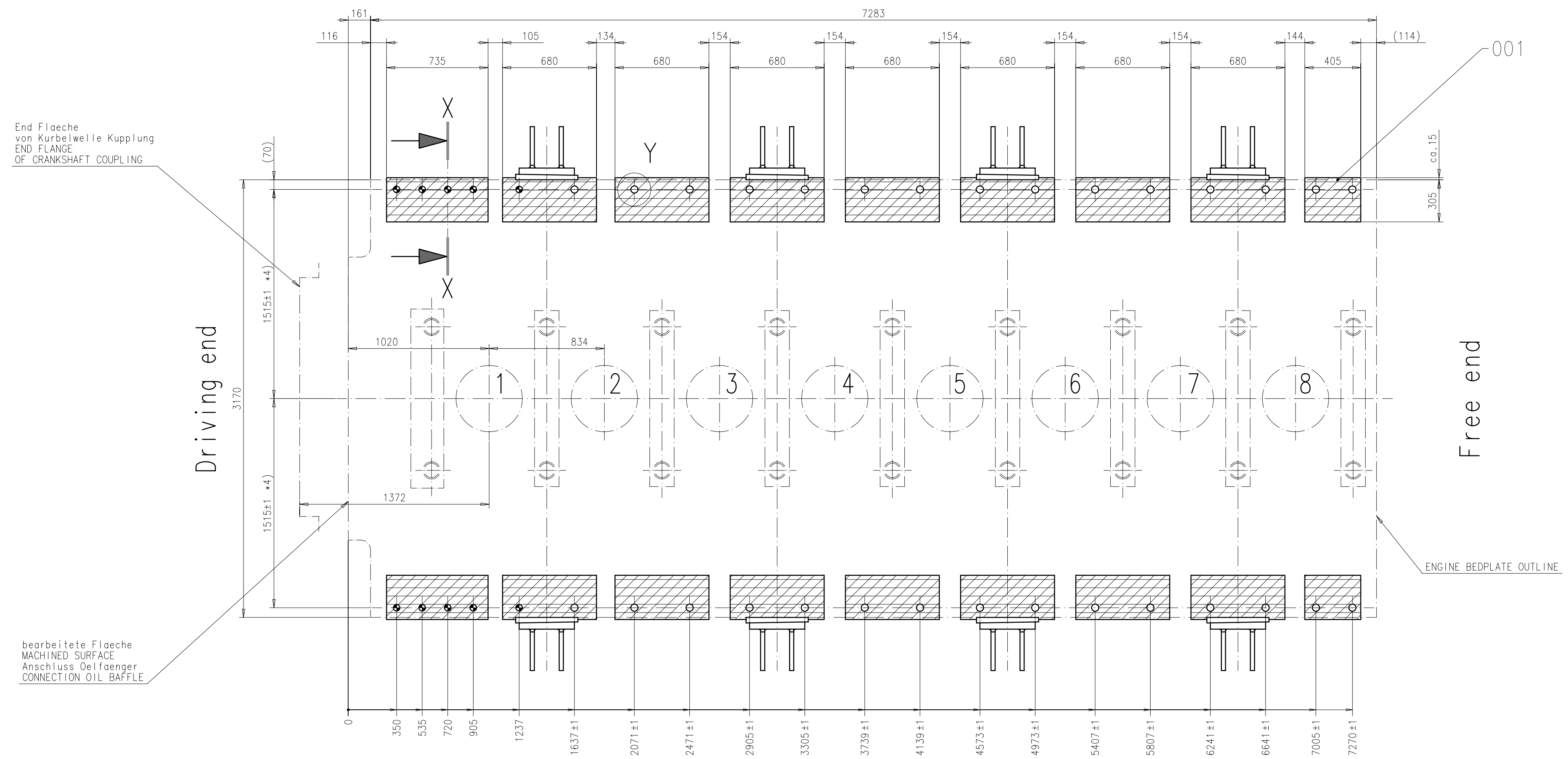


Table 1: Dimensions of epoxy resin chocks *1)

No. of cyls.	Max. perm. mean surface pressure of ckock *2)	Total chock length	Total net chocking area	Required quantity of epoxy resin material *3)	
	(N/mm^2)	(mm)	(cm^2)	min. (dm^3)	max.
8	4.5	5900	36213	91	218

No. of cyls.	Total No. of holes	No. of fitted studs
8	40	10

Remarks:

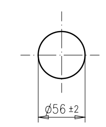
*1) For the layout is taken into consideration:
- A max. permissible static load of 0.7 N/mm^2.
- Engine holding down studs fully tightened according to fitting instructions
- Engine mass (incl. net engine mass according to ESPM, vibration damper, flywheel, water and oil)

*2) The max. permissible mean surface pressure of the epoxy resin chocks is to be determined by the shipyard in accordance with the relevant classification society/rules.

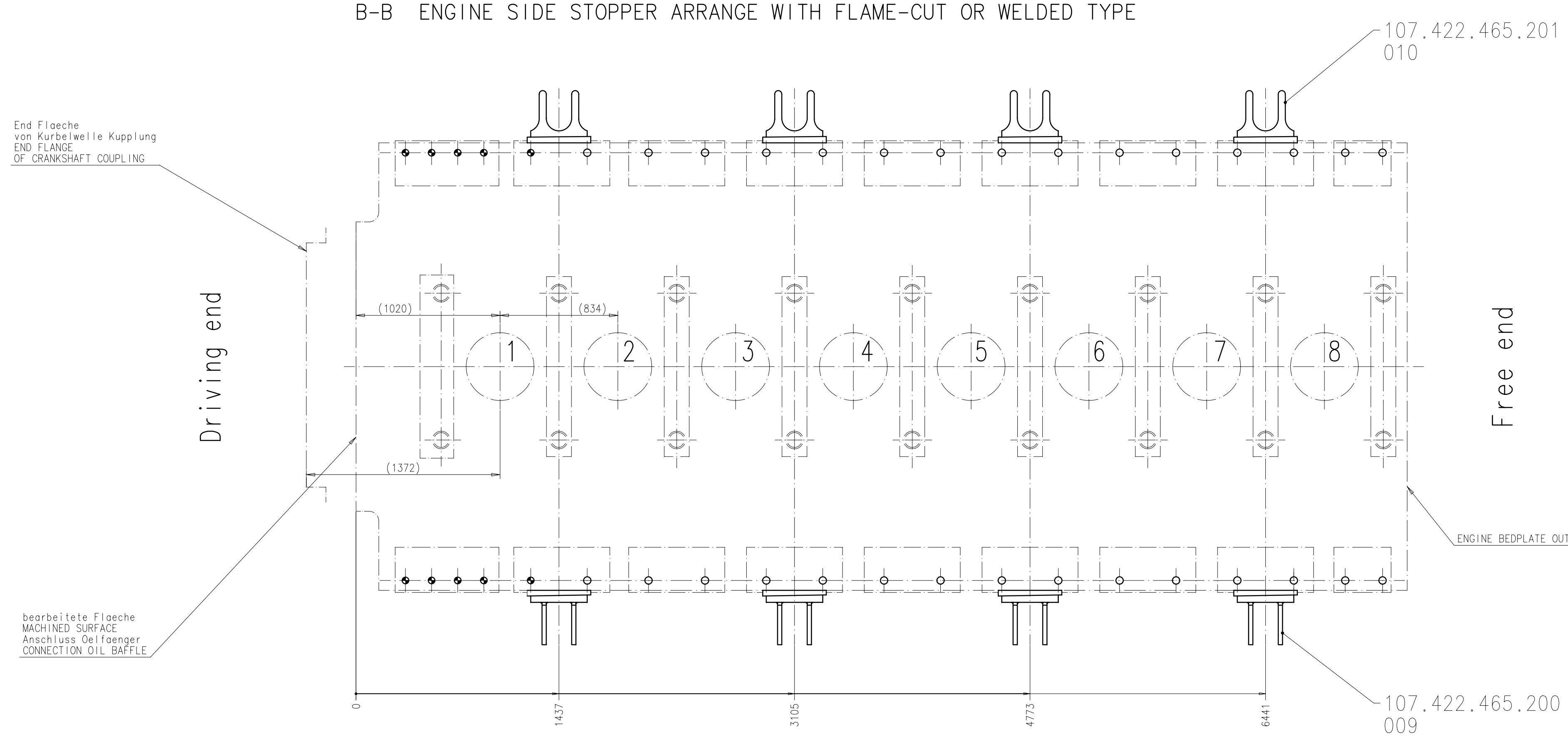
*3) Referring to a standardized chock thickness of 25 up to 60mm.

*4) Tolerance does not apply for fitted studs.

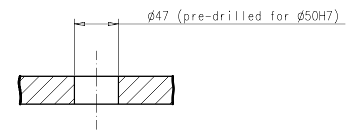
Y 1:5



B-B ENGINE SIDE STOPPER ARRANGE WITH FLAME-CUT OR WELDED TYPE



X-X 1:5



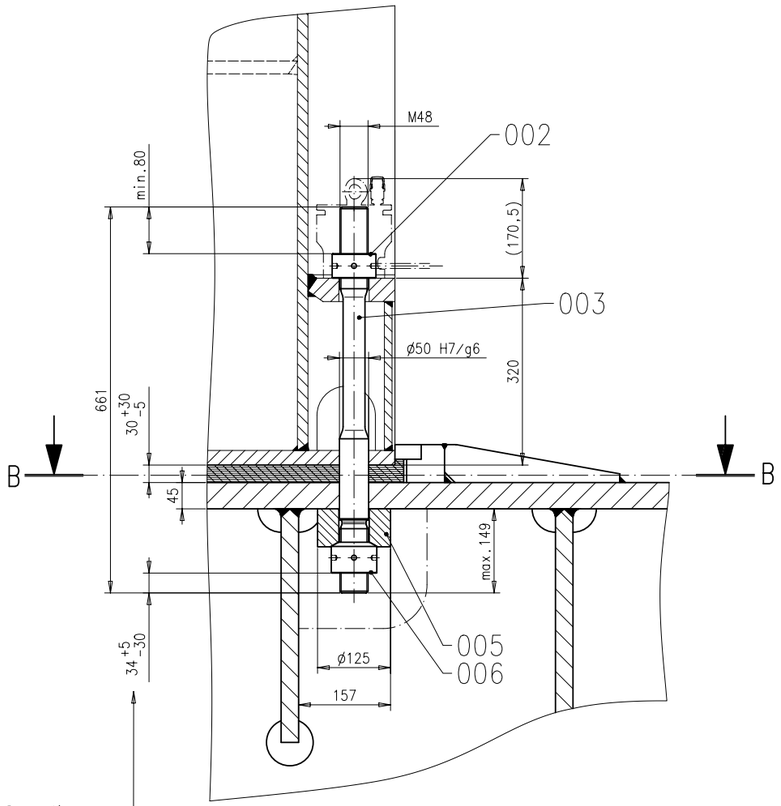
Free space for lic.		Q-Code XXXXX	Main Drw. H
		Standard ISO JIS	
Modif.	A EAAD082040 23.06.2010 (Number / Drawn date)		
WÄRTSILÄ	Product: 8RT-flex48T-D, 8RTA48, 8RTA48T, 8RTA48T-B, 8RTA48T-D	ENGINE SEATING/FOUNDATION FITTED STUDS	
Units mm kg	IDE	Basic Material	Net Weight
Made 26.05.2010 jba029 Baumann	Scale 1:14	Size A0	Page 3/3	Material ID
Chkd	Design Group 9710	Drawing ID 107.422.465	Rev. A
Appd 16.07.2010			

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

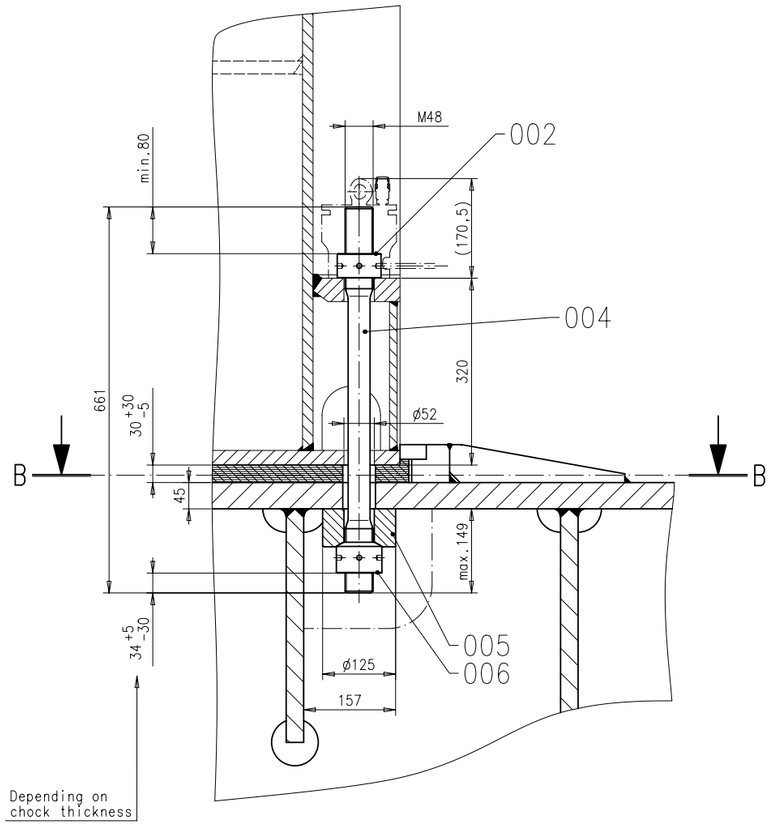
Approved

ASD - ASSEMBLY DRAWING - Internal

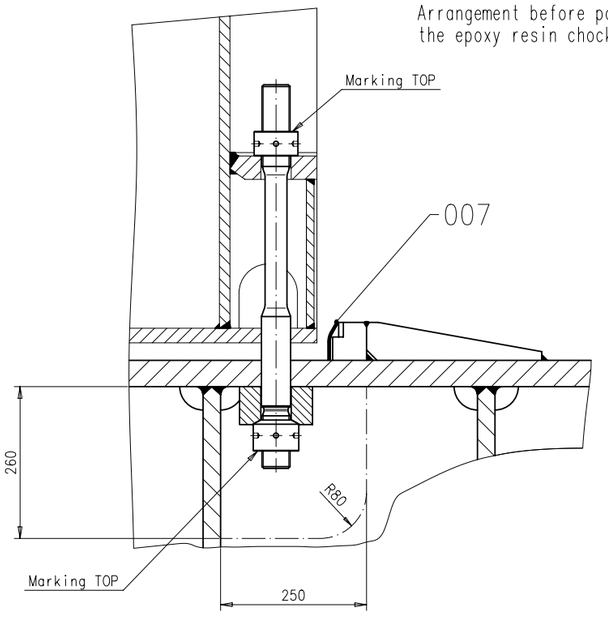
C–C



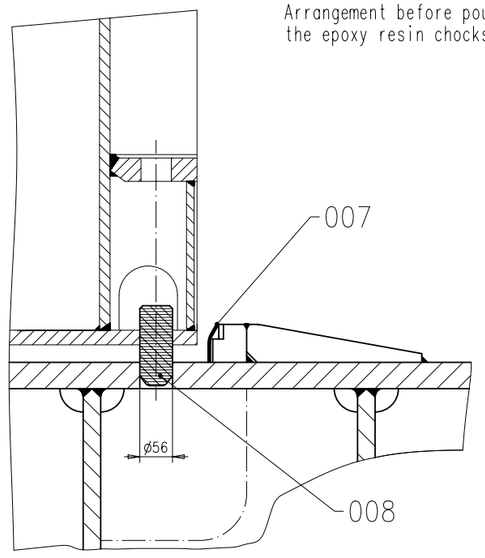
D–D



C–C



D–D



Free space for i.c.

Q-Code XXXXX | Main Drw. H

Standard ISO JIS

Approved

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD082040	23.06.2010						

WÄRTSILÄ

Product
8RT-flex48T-D
8RTA48
8RTA48T
8RTA48T-B
8RTA48T-D

ENGINE SEATING/FOUNDATION
FITTED STUDS

Units mm kg | IDE

Basic Material | Net Weight

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Made	26.05.2010 jba029 Baumann	Scale 1:14	Size A1	Page 3/3	Material ID
Chkd		Design Group 9710	Drawing ID 107.422.465		Rev. A
Appd	16.07.2010				

ASD - ASSEMBLY DRAWING - Internal

SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Properties	Standart	Values
Ultimate compression strength	ASTM D-695	min. 130 MPa
Compression yield point	ASTM D-695	min. 100 MPa
Compressive modulus of elasticity	ASTM D-695	min. 3100 MPa
Deformation under load Load550 N / 70°C Load1100 N / 70°C	ASTM D-621	 max. 0.10% max. 0.15%
Curing shrinkage	ASTM D-2566	max. 0.15%
Coefficient of thermal expansion (0-60 K)	ASTM D-696	max. 50×10^{-6} 1/K
Coefficient of friction normal		min. 0.3

Required properties of epoxy resin material

Free space for lic.

First introduced at

RTMOT

Modifications

Number	Drawn date	Number	Drawn date	Number	Drawn date

Q-Code: X Q X X X

Substitute for

Scale %

Epoxydharz

EPOXY RESIN

Drawn: M.PRSTEC 02.04.08

Wartsila Switzerland Ltd

CAD

Design group 9710

ISO / JIS

4-107.398.394

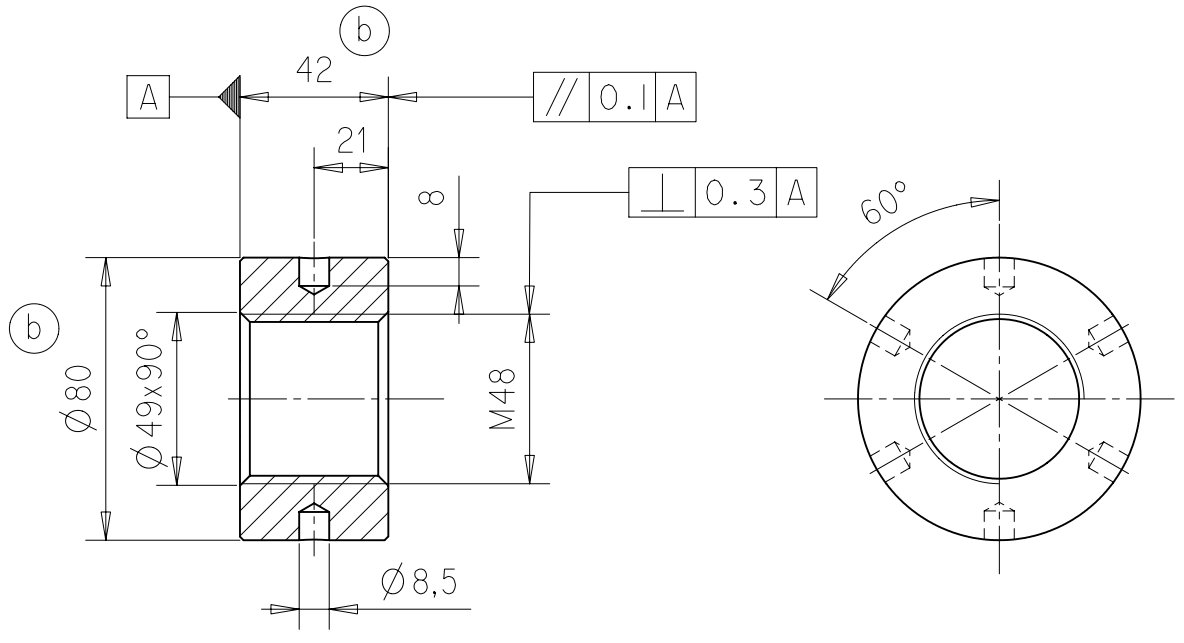
Page:

WÄRTSILÄ

SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
Number of 1			Drawing number	Material and remarks	~ mass kg/piece	
	001		107.246.021.001	Rundmutter M48		b
		4-		34CrMo4	1.1	
				ROUND NUT		



N9 Kanten gebrochen
SHARP EDGES REMOVED

Free space for lic.

Modifications	Number	Date	Number	Date	Number	Date	Number	Date	Number	Date
a	7-14.289	23.01.96								
b	7-14.323	04.12.96								

Q-Code X X X X X | Substitute for | Scale 1 : 2

Engine type: RT48T | Version

Rundmutter M48

ROUND NUT

Drawn: A. Horsfjord 05.10.95
M. Luethi 05.02.96

Wärtsilä NSD Switzerland Ltd

CAD

Design group: 9710 | ISO | JIS

4-107.246.021

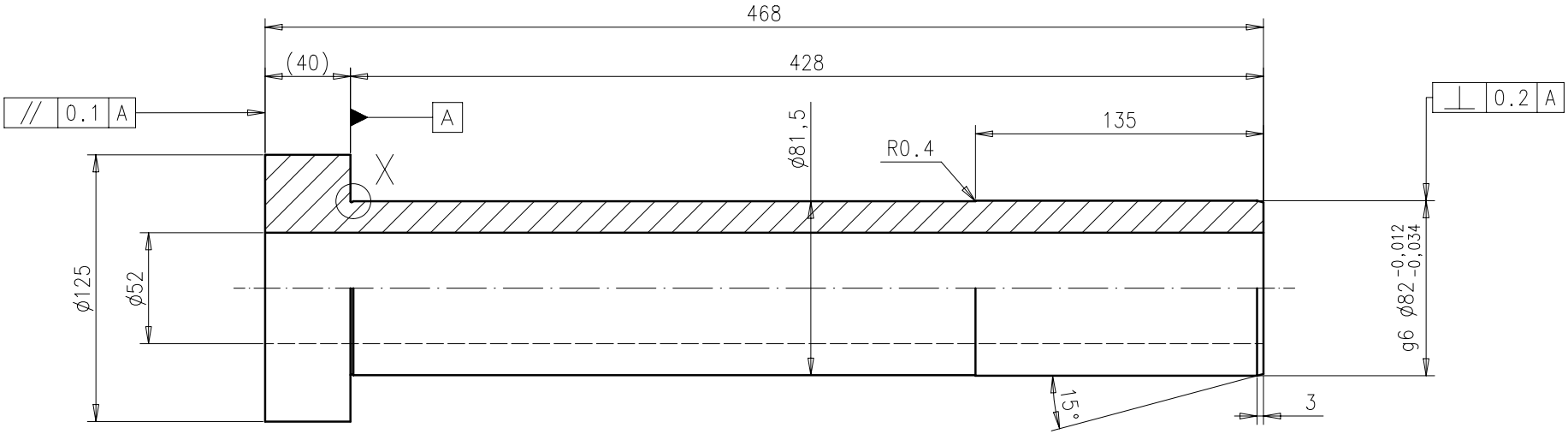
Page:

WÄRTSILÄ NSD CORPORATION

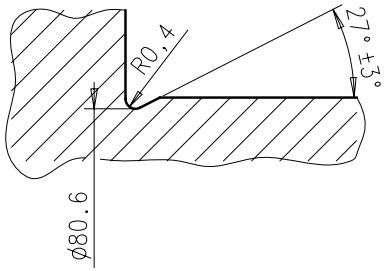
Exec. code number	Pos. code no	Article number	Designation	Source of supply	Modification letter
		Drawing number	Material and remarks	mass kg/piece	
Number of 1	001	107.422.172.001	Huelse		
	3-		34CrMo4 ; SCM 435	13.8	
			SLEEVE		

Ra3.2

Kanten gebrochen
SHARP EDGES REMOVED



X-X 10:1



SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Free space for lic.

First introduced at

RT-flex48T-D

Design group 9710 ISO JIS

Modifications	Number	Drawn date	Number	Drawn date	Number	Drawn date

Q-Code X X X X X Substitute for

Scale 1:2 / 1:5

Huelse

SLEEVE

Drawn: J.BAUMANN 17.06.09

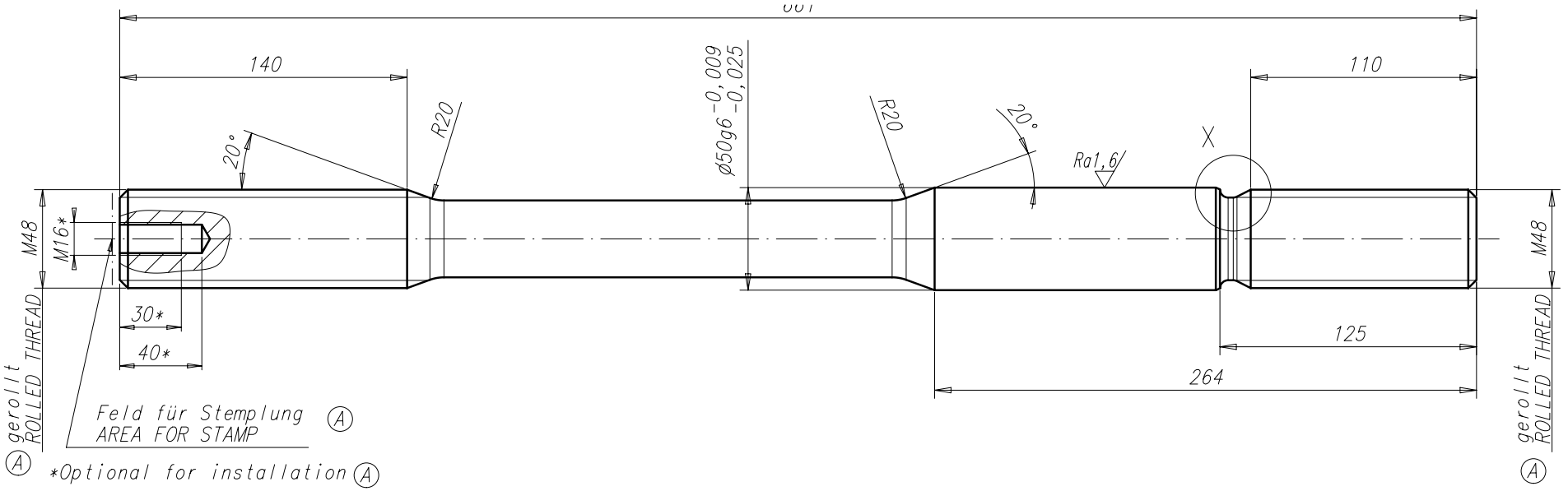
Wartsila Switzerland Ltd

CAD

3- 107.422.172

Page:

WÄRTSILÄ



Ra3.2 (√)

Bearbeitet vor dem Gewinderollen
MACHINED BEFORE THREAD ROLLING

verguetet, Rm = 800 $^{+150}_{0}$ N/mm^2
QUENCH HARDENED AND TEMPERED

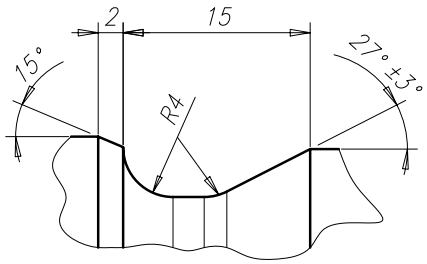
Streckgrenze Re = min. 550 N/mm^2
YIELD POINT

Bruchdehnung A(Lo = 5do) = min. 14%
ELONGATION AT BREAK

Kerbschlagarbeit ISO-V = 45J (Temp. 20°C)
IMPACT ENERGY

INSPECTION DOCUMENTS ACCORDING DIN EN 10204		
SOME SPECIFIC REQUIREMENTS MAY HAVE TO BE FOLLOWED. THIS IS TO BE AGREED WITH THE APPROPRIATE CLASSIFICATION SOCIETY		
TEST TYPE	CERTIFICATE TYPE	TESTING FREQUENCY
MATERIAL	MATERIAL IDENTIFICATION	-
CHEMICAL ANALYSIS	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
TENSILE TEST	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
IMPACT TEST	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
HARDNESS TEST	INSPECTION CERTIFICATE 3.1 (INDEPENDENT AUTHORITY)	EXAMINATION OF EACH PART
SURFACE CRACK DES. TEST	CLASSIFICATION CERTIFICATE 3.2	EXAMINATION OF EACH PART

X 5:1



SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Free space for lic.

Q-Code XXXXX

Main Drw.

Standard ISO JIS

Approved

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD083605	14.02.2012						

WÄRTSILÄ

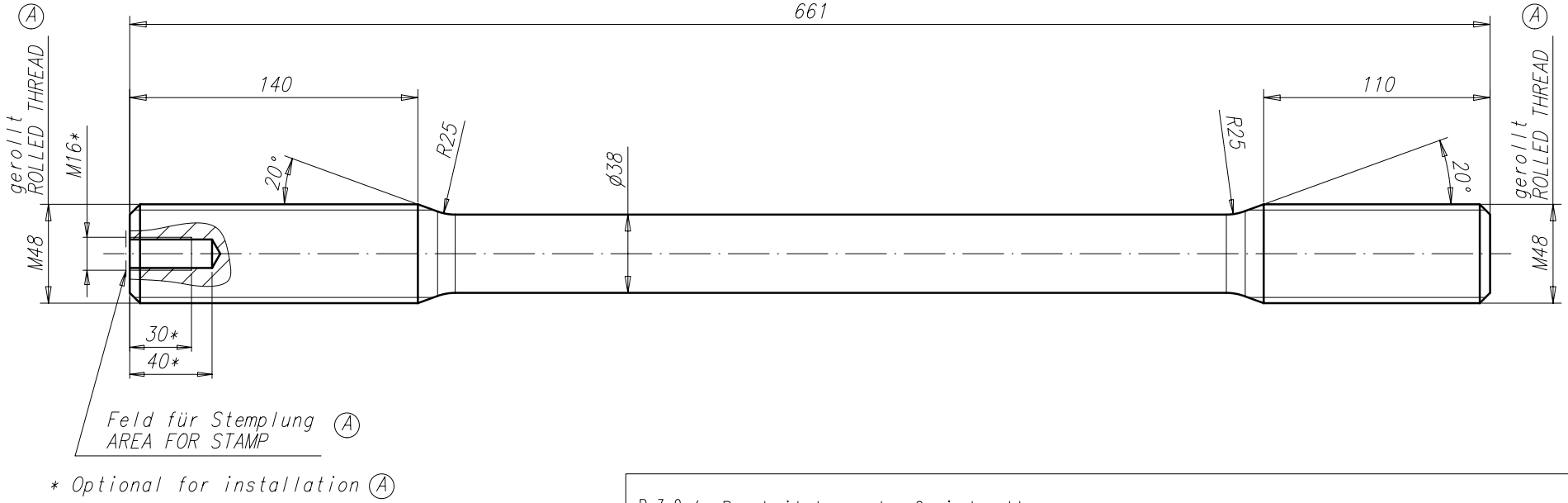
Product RT-flex48T-D

FITTED STUD

Passbolzen

Units	mm kg	IDE	Basic Material	34CrMo4 SCM 435	Net Weight 8,2
Made	24.06.2009 J.BAUMANN		Scale 1:2	Size A3	Page 1/1	Material ID 107.422.461.001
Chkd			Design Group 9710	Drawing ID 107.422.461	Rev. A
Appd	29.09.2009 jba029 Baumann				

DID - DIMENSIONAL DRAWING - Confidential



* Optional for installation (A)

Ra3.2

Bearbeitet vor dem Gewinderollen
MACHINED BEFORE THREAD ROLLING

verguetet, Rm = 800 $^{+150}_{0}$ N/mm^2
QUENCH HARDENED AND TEMPERED

Streckgrenze Re = min. 550 N/mm^2
YIELD POINT

Bruchdehnung A(Lo = 5do) = min. 14%
ELONGATION AT BREAK

Kerbschlagarbeit ISO-V = 45J (Temp. 20°C)
IMPACT ENERGY

INSPECTION DOCUMENTS ACCORDING DIN EN 10204		
SOME SPECIFIC REQUIREMENTS MAY HAVE TO BE FOLLOWED. THIS IS TO BE AGREED WITH THE APPROPRIATE CLASSIFICATION SOCIETY		
TEST TYPE	CERTIFICATE TYPE	TESTING FREQUENCY
MATERIAL	MATERIAL IDENTIFICATION	-
CHEMICAL ANALYSIS	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
TENSILE TEST	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
IMPACT TEST	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
HARDNESS TEST	INSPECTION CERTIFICATE 3.1 (INDEPENDENT AUTHORITY)	EXAMINATION OF EACH PART
SURFACE CRACK DES. TEST	CLASSIFICATION CERTIFICATE 3.2	EXAMINATION OF EACH PART

Free space for lic.

Q-Code XXXXX

Main Drw.

Standard ISO JIS

Approved

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD083605	10.02.2012						

WÄRTSILÄ

Product RT-flex48T-D

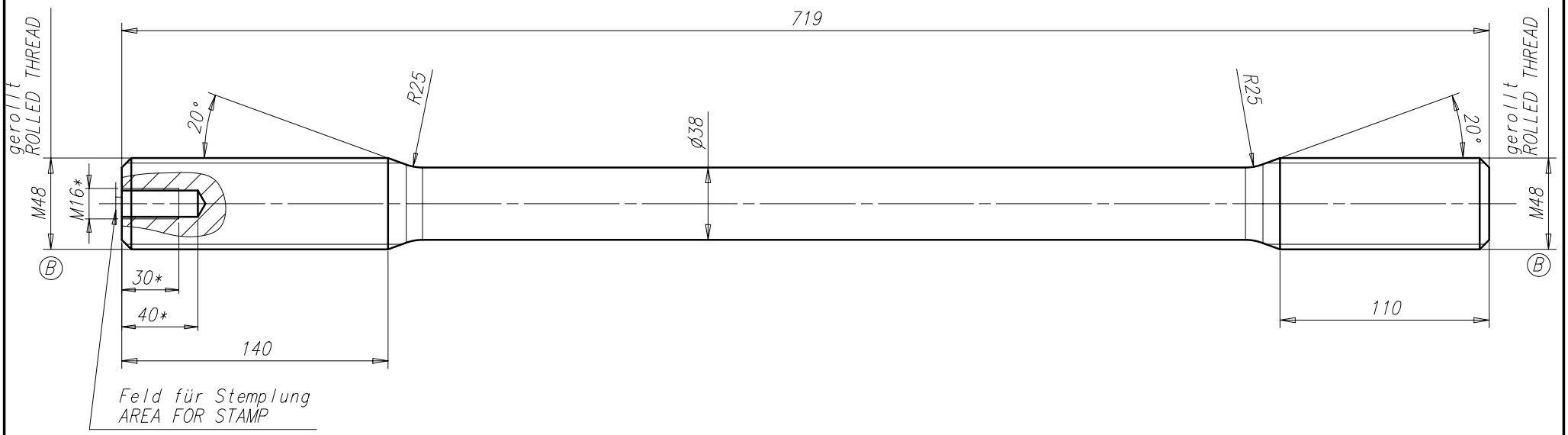
ELASTIC BOLT

Dehnbolzen

Units	mm kg	IDE	Basic Material	34CrMo4 SCM 435	Net Weight	7.3
Made	17.06.2009 J.BAUMANN		Scale	1:2	Size A3	Page 1/1
Chkd			Design Group	9710	Material ID	107.422.171.001
Appd	29.09.2009 jba029 Baumann		Drawing ID	107.422.171	Rev.	A

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

DID - DIMENSIONAL DRAWING - Confidential



* Optional for installation

Ra3.2

Bearbeitet vor dem Gewinderollen
MACHINED BEFORE THREAD ROLLING

verguetet, Rm = 800 $^{+150}_{0}$ N/mm^2
QUENCH HARDENED AND TEMPERED

Streckgrenze Re = min. 550 N/mm^2
YIELD POINT

Bruchdehnung A(Lo = 5do) = min. 14%
ELONGATION AT BREAK

Kerbschlagarbeit ISO-V = 45J (Temp. 20°C)
IMPACT ENERGY

INSPECTION DOCUMENTS ACCORDING DIN EN 10204		
SOME SPECIFIC REQUIREMENTS MAY HAVE TO BE FOLLOWED. THIS IS TO BE AGREED WITH THE APPROPRIATE CLASSIFICATION SOCIETY		
TEST TYPE	CERTIFICATE TYPE	TESTING FREQUENCY
MATERIAL	MATERIAL IDENTIFICATION	-
CHEMICAL ANALYSIS	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
TENSILE TEST	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
IMPACT TEST	CLASSIFICATION CERTIFICATE 3.2	TEST PER ORDER LOT OR PER CHARGE IF SEVERAL CHARGES
HARDNESS TEST	INSPECTION CERTIFICATE 3.1 (INDEPENDENT AUTHORITY)	EXAMINATION OF EACH PART
SURFACE CRACK DES. TEST	CLASSIFICATION CERTIFICATE 3.2	EXAMINATION OF EACH PART

Free space for lic.

Q-Code XXXXX

Main Drw.

Standard ISO JIS

Approved

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD083605	07.02.2012	B EAAD083926	28.06.2012				

WÄRTSILÄ

Product W-2S

ELASTIC BOLT

Dehnbolzen

Units	mm kg	IDE	Basic Material	34CrMo4 SCM 435	Net Weight	7.8
Made	17.06.2009 J.BAUMANN		Scale	1:2	Size	A3
Chkd			Design Group	9710	Page	1/1
Appd	29.09.2009 jba029 Baumann				Material ID	107.422.170.001
					Drawing ID	107.422.170
					Rev.	B

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

PD - PRODUCTION DRAWING - Confidential

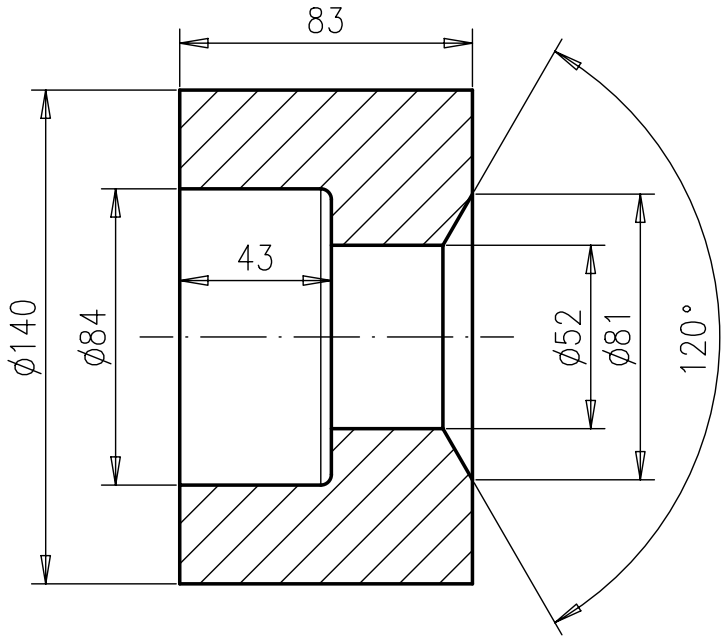
SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
			Drawing number	Material and remarks	mass kg/piece	
Number of 1	001		107.422.173.001	Konische Buechse		
		4-		34CrMo4 ; SCM 435	7.400	
				CONICAL SOCKET		

Ra6,3

Kanten gebrochen
SHARP EDGES REMOVED



Free space for lic.

First introduced at

RT-flex48T-D

Modifications	Number	Drawn date	Number	Drawn date	Number	Drawn date

Q-Code X X X X X Substitute for

Scale 1:2

Konische Buechse

CONICAL SOCKET

Drawn: J.BAUMANN 17.06.09

Wartsila Switzerland Ltd

CAD

Design group 9710

ISO / JIS

4-107.422.173

Page:

WÄRTSILÄ

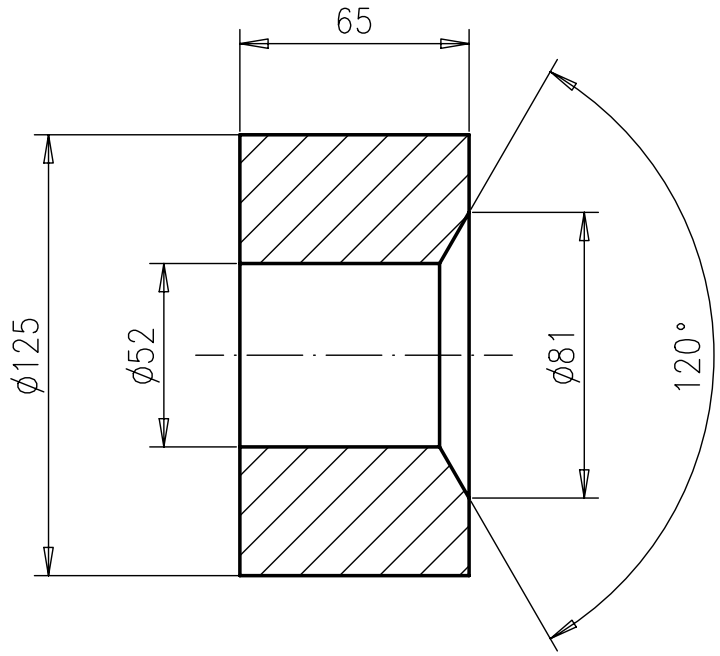
SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
			Drawing number	Material and remarks	mass kg/piece	
Number of 1	001		107.422.174.001	Konische Buechse		
		4-		34CrMo4 ; SCM 435	5.100	
				CONICAL SOCKET		

Ra6,3

Kanten gebrochen
SHARP EDGES REMOVED



Free space for lic.

First introduced at

RT-flex48T-D

Modifications	Number	Drawn date	Number	Drawn date	Number	Drawn date

Q-Code X X X X X Substitute for

Scale 1:2

Konische Buechse

CONICAL SOCKET

Drawn: J.BAUMANN 17.06.09

Wartsila Switzerland Ltd

CAD

Design group 9710

ISO / JIS

4-107.422.174

Page:

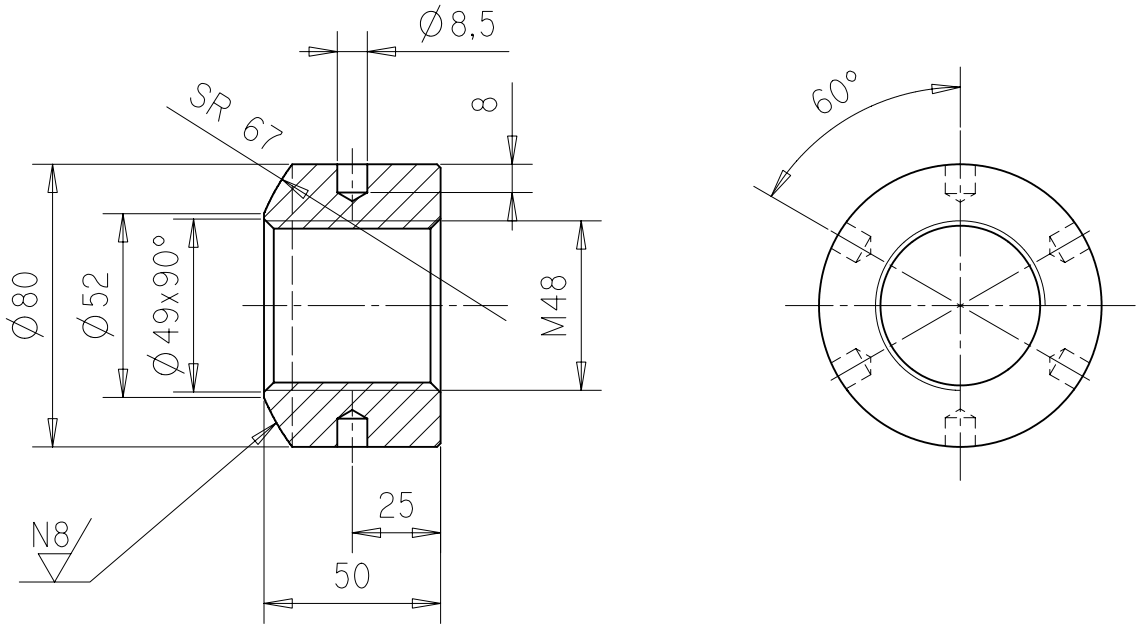
WÄRTSILÄ

SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
			Drawing number	Material and remarks	~ mass kg/piece	
Number of 1	001		107.246.051.001	Konische Rundmutter M48		
		4-		34CrMo4	1.2	
				SPHERICAL ROUND NUT		

N9 ▽ Kanten gebrochen
SHARP EDGES REMOVED



Free space for lic.

Modifications

Number	Date	Number	Date	Number	Date	Number	Date

Q-Code X X X X X | Substitute for | Scale 1 : 2

Engine type: RT48T | Version

Konische Rundmutter M48

SPHERICAL ROUND NUT

Drawn: R. Nideroest 13.11.95
M. Luethi 20.11.95

Wärtsilä NSD Switzerland Ltd

CAD

Design group: 9710 | ISO | JIS

4-107.246.051

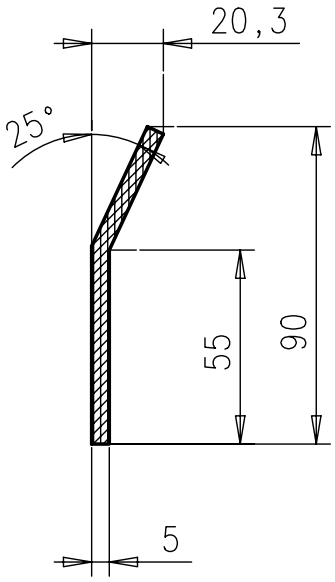
Page:

WÄRTSILÄ NSD CORPORATION

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK



Free space for lic.

Q-Code XXXXX

Standard ISO JIS

Main Drw.

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD082947	21.06.2011						

WÄRTSILÄ

Product
RTMOT

SEALING PIECE
FOR CHOCKING FAST

Dichtleiste
fuer chocking fast

Units mm kg | IDE

Basic Material material acc.to shipyards experience

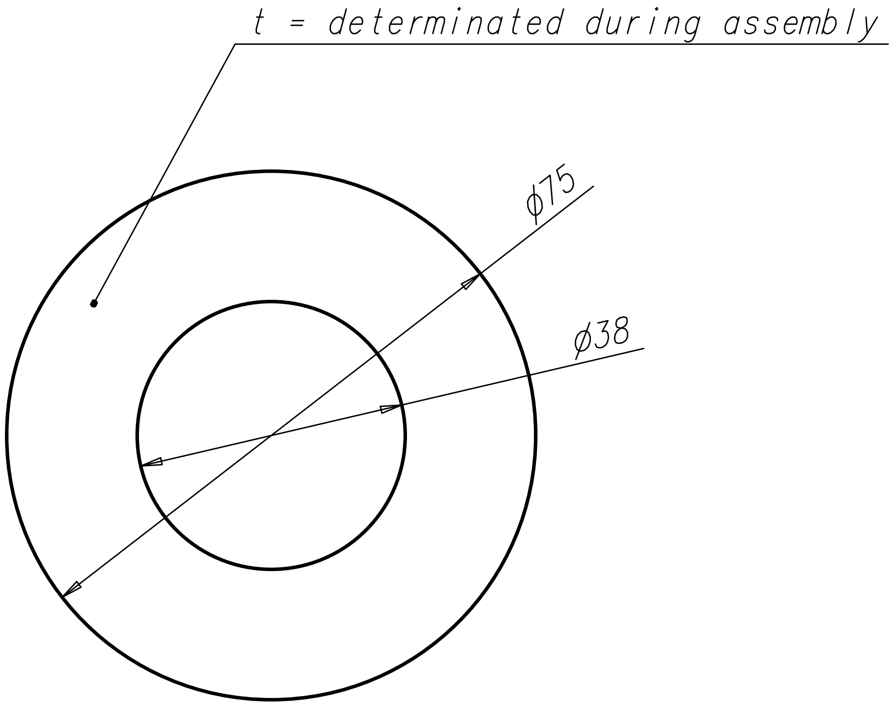
Net Weight 0.001

Made	13.02.2006 R. ZUCCHI	Scale 1:1	Size A4	Page 1/1	Material ID 107.367.119.001
Chkd		Design Group 9710			
Appd	03.04.2006 sna001 Natali		Drawing ID 107.367.119		Rev. A

Approved

PD - PRODUCTION DRAWING - Confidential

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK



Approved

Q-Code	XXXXX
Standard	ISO JIS
Main Drw.	

Free space for lic.

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date

WÄRTSILÄ

Product: RT-flex48T-D, RTA48, RTA48T, RTA48T-B, RTA48T-D

JOINT DISC

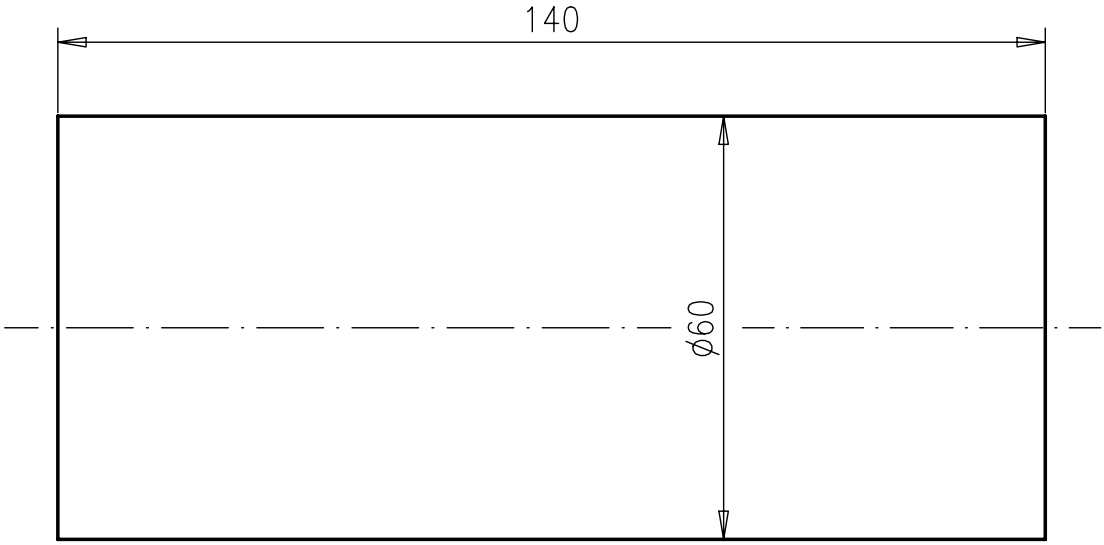
Dichtscheibe

Units	mm kg
	IDE
Basic Material	Rubber750
Net Weight	0.01
Made	**25.05.2010 jba029 Baumann**
Chkd	23.06.2010 wwr001 Wroblewski
Appd	24.06.2010 dst009 Stroedecke
Scale	1:1
Design Group	9710
Size	A4
Page	1/1
Material ID	PAAD004345
Drawing ID	DAAD005525
Rev.	–

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK



Free space for lic.

Q-Code XXXXX

Standard ISO JIS

Main Drw.

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD082947	27.06.2011						

WÄRTSILÄ

Product
RT-flex48T-D

PLUG
FOR CHOCKING FAST
Stopfen
fuer chocking fast

Units mm kg | IDE

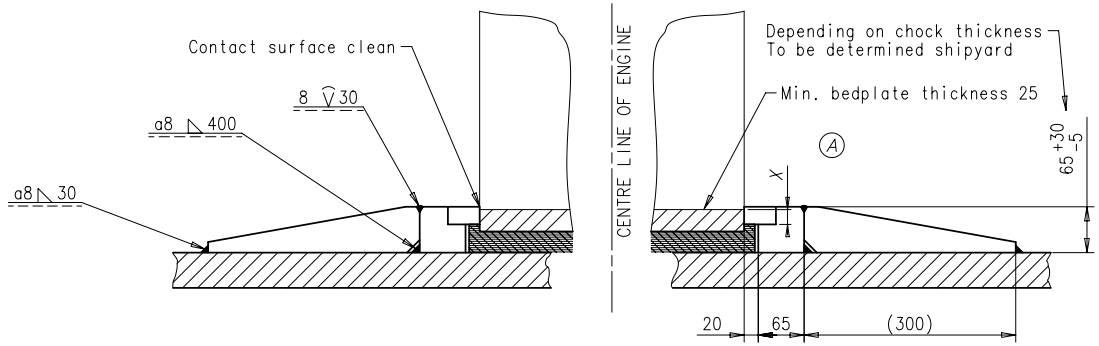
Basic Material material acc.to shipyards experience

Net Weight 0.001

Made	20.09.2010 jba029 Baumann	Scale 1:1	Size A4	Page 1/1	Material ID	107.423.297.001
Chkd		Design Group 9710	Drawing ID	107.423.297	Rev.	A
Appd	29.09.2009 jba029 Baumann					

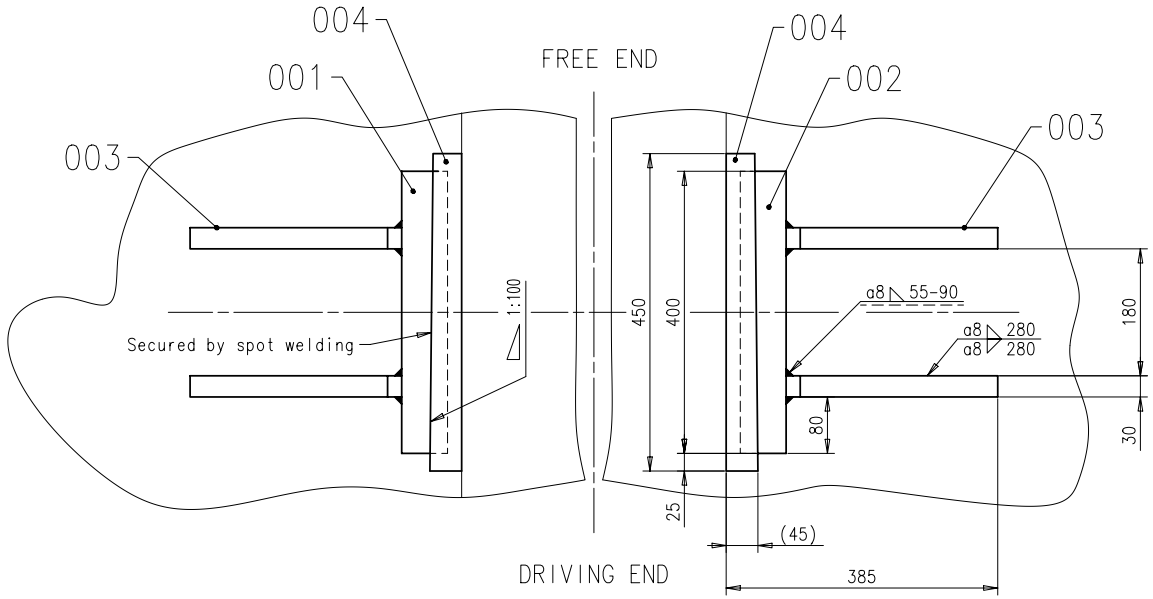
Approved

DID - DIMENSIONAL DRAWING - Confidential



Contact surface between wedge and engine bedplate:

Ⓐ	RT-flex48T-D
X [mm]	min. 12



Pos. 001-003: These parts cover a standardized chock thickness from 25mm up to 60mm

WELD QUALITY LEVEL Q3

QTY	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
2	004	107.325.275.001	FLAT BAR	45x25x450	107.325.275	St 37-2 St 37-2	3.8
4	003	107.422.179.001	FLAT BAR		107.422.179	S235JRH SS400	1.5
1	002	107.376.672.002	FLAT BAR	65x90x400	107.376.672	S235JRH SS400	15.7
1	001	107.376.672.001	FLAT BAR	65x90x400	107.376.672	S235JRH SS400	15.7

Free space for lic.

Q-Code XXXXX

Standard ISO JIS

Main Drw.

Approved

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD084051	05.09.2012						

WÄRTSILÄ

Product WZ-S

ENGINE SIDE STOPPER
WELDED TYPE
Motor-Seitenstopper

Units mm kg | IDE | Basic Material | Net Weight 45.0

SURFACE PROTECTION SEE GROUP 0344	Made	10.10.2006 M.Prstec	Scale 1:5	Size A2	Page 1/1
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710	Material ID 107.376.678.200	
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	29.09.2009 jba029 Baumann	Drawing ID 107.376.678	Rev. A	

ASD - ASSEMBLY DRAWING - Internal

SURFACE PROTECTION SEE GROUP 0344

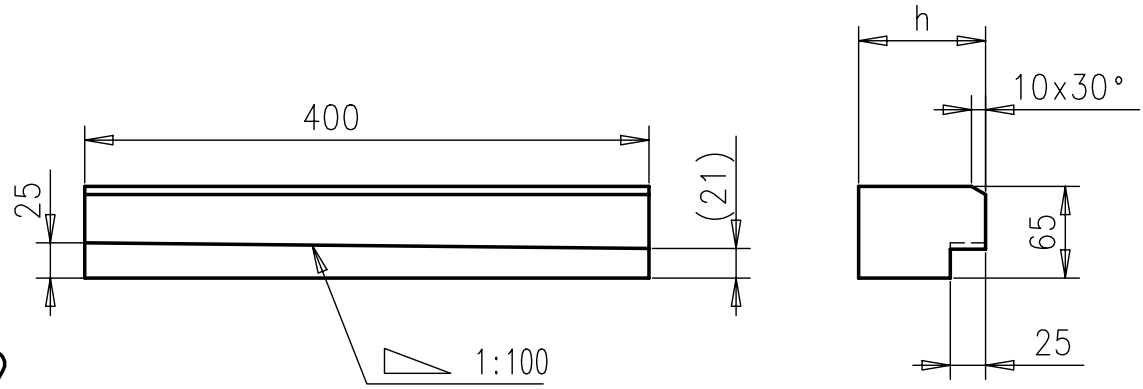
GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
200			Drawing number	Material and remarks	mass kg/piece	
Number of 1	001		107.376.672.001	Flachstahl 65x90x400		
		4-		S235JRH ; SS400	15.7	
				FLAT BAR		
1	002		107.376.672.002	Flachstahl 65x90x400		
		4-		S235JRH ; SS400	15.7	
				FLAT BAR		
kg 31.4						

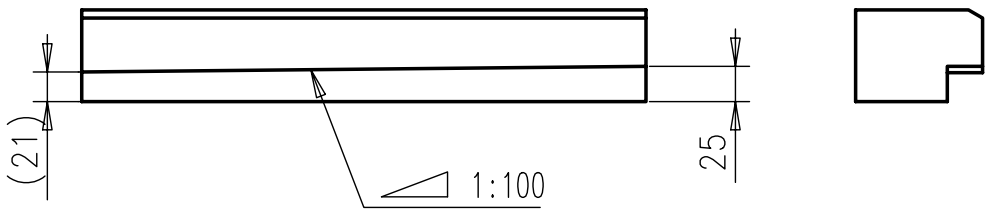
Ra6,3

h = 65-100 Abhaengig von Chockdicke,
durch Werft zu bestimmen
DEPENDING ON CHOCK THICKNESS,
TO BE DETERMINED BY THE SHIPYARD

001



002



Free space for lic.

First introduced at

RT-flex48T-D

Modifications	Number	Drawn date	Number	Drawn date	Number	Drawn date

Q-Code X X X X X Substitute for

Scale 1:5

Flachstahl
zu Motor-Seitenstopper

FLAT BAR
TO ENGINE SIDE STOPPER

Drawn: M.Prstec 10.10.06

Wartsila Switzerland Ltd

CAD

Design group 9710

ISO
JIS

4-107.376.672

Page:

WÄRTSILÄ

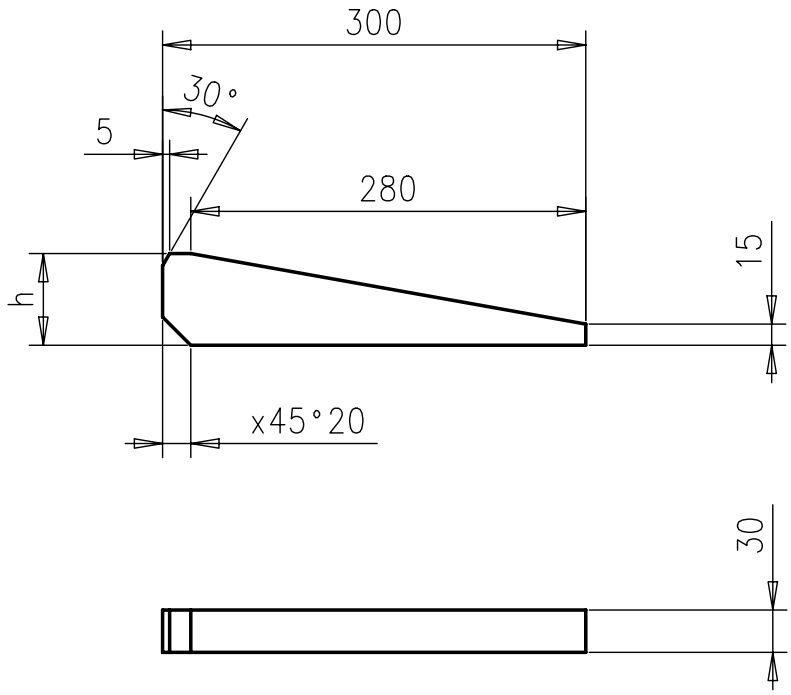
SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
			Drawing number	Material and remarks	mass kg/piece	
Number of 1	001		107.422.179.001	Flachstahl		
		4-		S235JRH ; SS400	1.500	
				FLAT BAR		

Ra6,3

h = 60-95 Abhaengig von Chockdicke,
durch Werft zu bestimmen.
DEPENDING ON CHOCK THICKNESS,
DETERMINED BY THE SHIPYARD



Free space for lic.

First introduced at

RT-flex48T-D

Modifications	Number	Drawn date	Number	Drawn date	Number	Drawn date

Q-Code X X X X X Substitute for

Scale 1:5

Drawn: J.BAUMANN 17.06.09

Flachstahl

FLAT BAR

Wartsila Switzerland Ltd

CAD

Design group 9710

ISO JIS

4-107.422.179

Page:

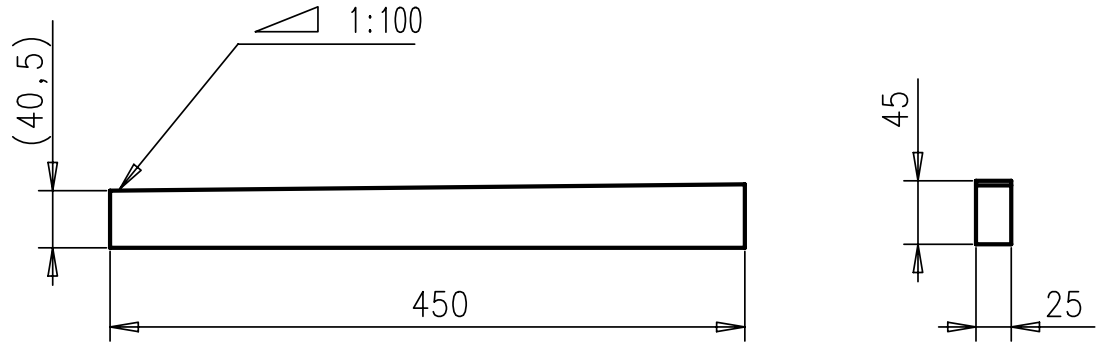
WÄRTSILÄ

SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
			Drawing number	Material and remarks	mass kg/piece	
Number of 1	001		107.325.275.001	Flachstahl 45x25x450		
		4-		St 37-2	3.800	
				FLAT BAR		

N9 Kanten gebrochen
SHARP EDGES REMOVED



Free space for lic.

Modifications

Number	Date	Number	Date	Number	Date	Number	Date

Q-Code X X X X X | Substitute for | Scale 1:5

Engine type
RT48T
RT48T-B

Version

Schraeger Keil
zu Motor - Seitenstopper

WEDGE
TO ENGINE SIDE STOPPER

Drawn: S.STYLIANOU 16.01.02

Wartsila Switzerland Ltd

CAD

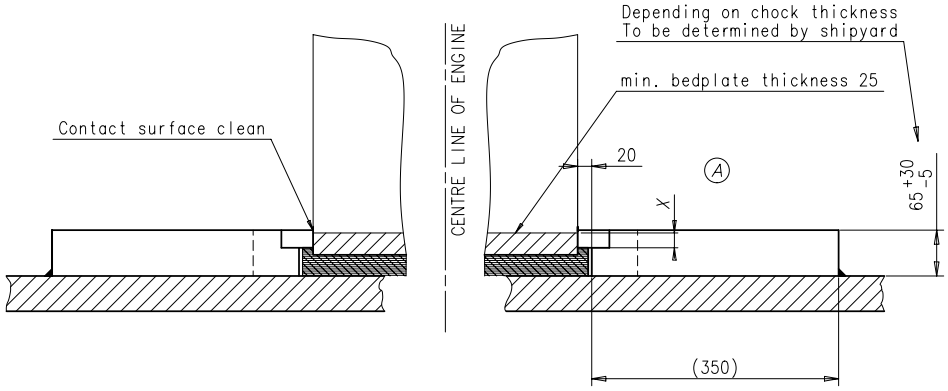
Design group
9710

ISO
JIS

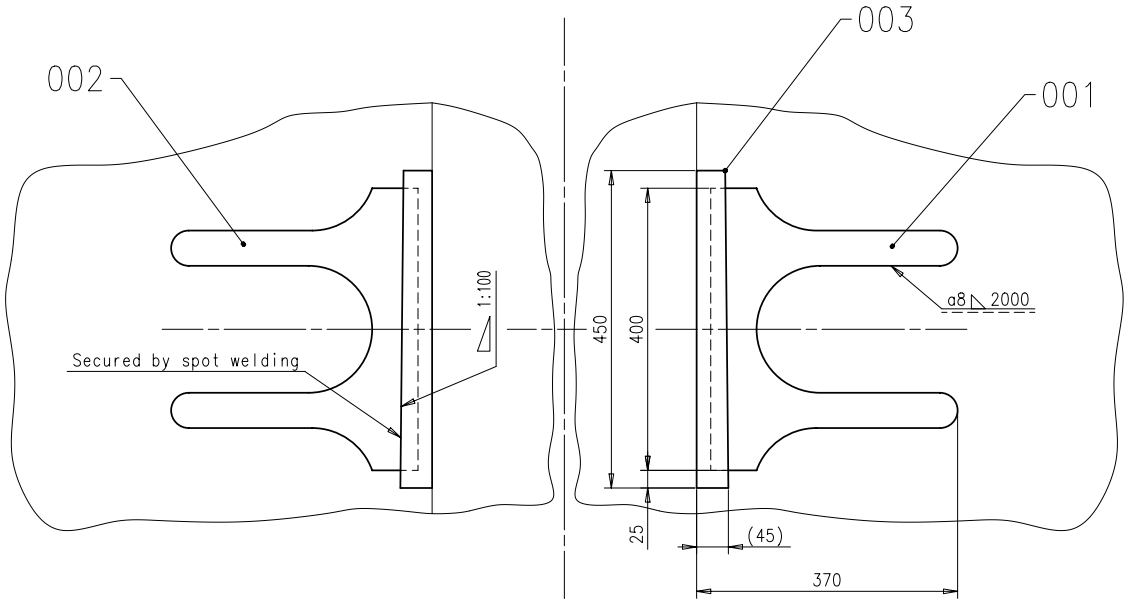
4-107.325.275

Page:

WÄRTSILÄ



FREE END



DRIVING END

Contact surface between wedge and engine bedplate:

A		RT-flex48T-D
	X [mm]	min. 12

Pos. 001-002: These parts cover a standardized chock thickness from 25mm up to 60mm

WELD QUALITY CLASS Q3

QTY	SEQ NO	Material ID	Material Name	Dimension/Occ.Dimension	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
2	003	107.325.275.001	FLAT BAR	45x25x450	107.325.275	St 37-2 St 37-2	3.8
1	002	107.246.025.002	SHEET METAL		107.246.025	RSt 37-2 RSt 37-2	28.9
1	001	107.246.025.001	SHEET METAL		107.246.025	RSt 37-2 RSt 37-2	28.9

Free space for lic.

Q-Code XXXXX

Standard ISO JIS

Main Drw.

Approved

Modif.		Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date
	A	EAAD084051	25.09.2012									

WÄRTSILÄ

Product W-2S

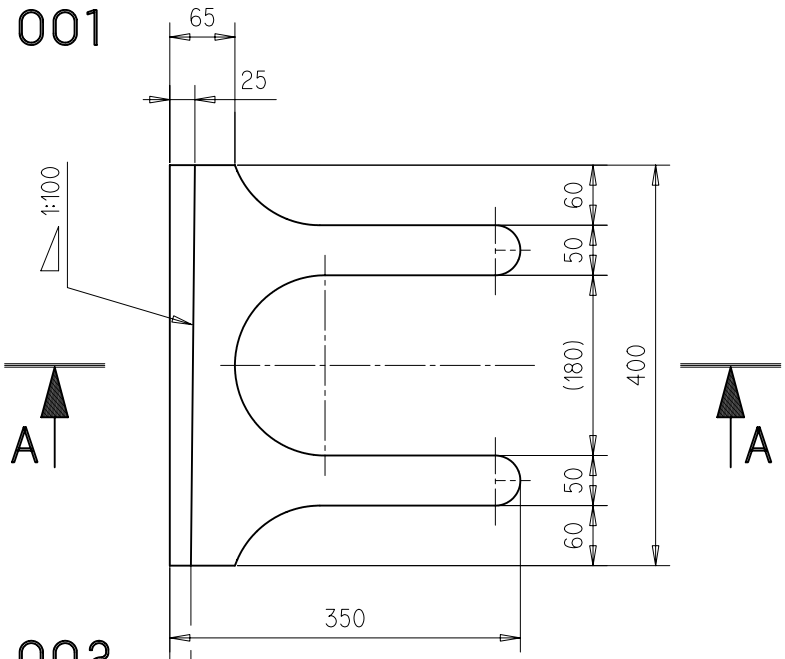
ENGINE SIDE STOPPER
FLAME-CUT
Seitenstopper

Units mm kg | IDE | Basic Material | Net Weight 65.4

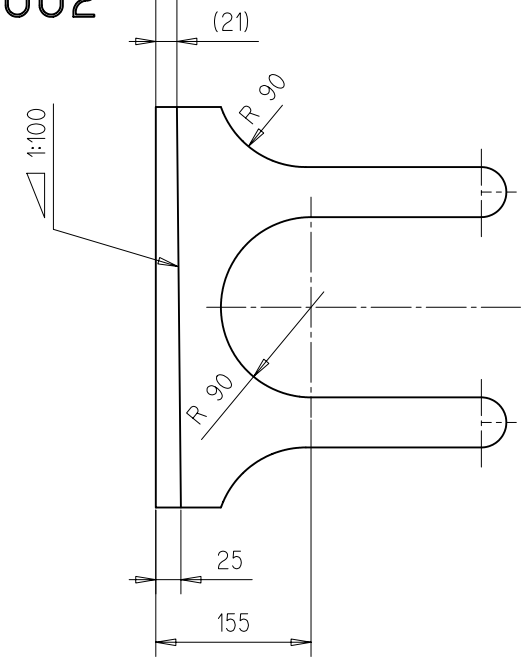
SURFACE PROTECTION SEE GROUP 0344	Made	17.06.2009 J.Baumann	Scale 1:5	Size A2	Page 1/1	Material ID 107.422.180.200	
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710				
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	29.09.2009 jba029 Baumann		Drawing ID 107.422.180			Rev. A

ASD - ASSEMBLY DRAWING - Internal

001



002

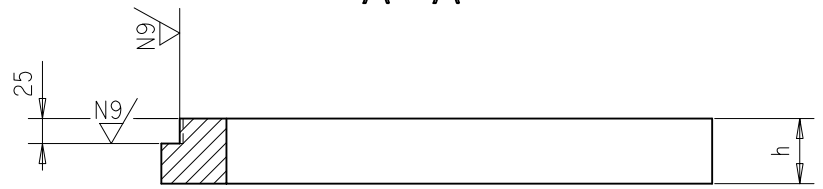


Exec. code number	Pos. code no		Article number / Drawing number	Designation	Source of supply / ~ mass kg/piece	Modification letter
Number of 1	001		107.246.025.001	Blech 350xhx400		
		3-		RSt37-2	28.9	
				SHEET METAL		
Number of 1	002		107.246.025.002	Blech 350xhx400		
		3-		RSt37-2	28.9	
				SHEET METAL		

N12 / (N9) Kanten gebrochen
SHARP EDGES REMOVED

h =(65-85mm) Abhaengig von Chockdicke,
durch Werft zu bestimmen
DEPENDING ON CHOCK THICKNESS,
TO BE DETERMINED BY SHIP YARD

A-A



SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Modifications | Free space for lic.

Number	Date	Number	Date	Number	Date	Number	Date

Q-Code X X X X | Substitute for | Scale 1 : 5

Engine type: RT48T | Version

Design group: 9710 | ISO / JIS

Blech
zu Motor-Seitenstopper

SHEET METAL
TO ENGINE SIDE STOPPER

3-107.246.025

Page:

Drawn: G. Giacometti 09.12.96

Wärtsilä NSD Switzerland Ltd

CAD

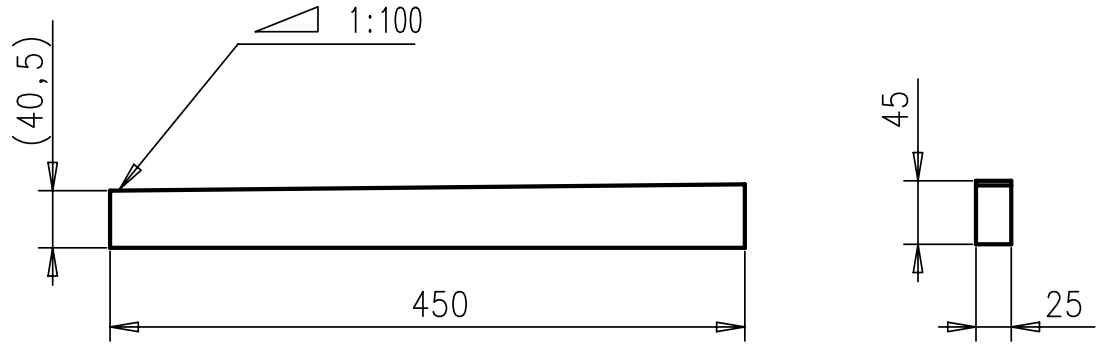
WÄRTSILÄ NSD CORPORATION

SURFACE PROTECTION SEE GROUP 0344

GENERAL TOLERANCES ACCORDING TO ISO/2768-m

Exec. code no	Pos. code no		Article number	Designation	Source of supply	Modification letter
			Drawing number	Material and remarks	mass kg/piece	
Number of 1	001		107.325.275.001	Flachstahl 45x25x450		
		4-		St 37-2	3.800	
				FLAT BAR		

N9 Kanten gebrochen
SHARP EDGES REMOVED



Free space for lic.

Modifications

Number	Date	Number	Date	Number	Date	Number	Date

Q-Code X X X X X | Substitute for | Scale 1:5

Engine type
RT48T
RT48T-B

Version

Schraeger Keil
zu Motor - Seitenstopper

WEDGE
TO ENGINE SIDE STOPPER

Drawn: S.STYLIANOU 16.01.02

Wartsila Switzerland Ltd

CAD

Design group
9710

ISO
JIS

4-107.325.275

Page:

WÄRTSILÄ

MIDS_WinGD-RT-flex48T-D_ENGINE-SEATING_and_FOUNDATION

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2017-08-21	DRAWING SET	First web upload