

SKF Machine Support

c/o Machine Support B.V.

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Shipyard / Customer : STX Europe Langsten AS
 Shipname / Project : STX-NOL 731 - 732
 Classification society : Det Norske Veritas
 Object : Gearbox
 Make / type : Wärtsilä SCV128-SD65

Selection of Vibracon SM element**Machine**

Mass (if engine with water +oil)	:	47.000	(kg)
Power	:	12.500	(kW)
Revolutions	:	720	(rpm)
Foundation width (bolt distance)	:	1.420	(mm)
Number of elements	:	20	(-)
Bolthole diameter	:	45	(mm)
Reduction rate	:	5,538	(-)
Average distance of boltholes	:	300	(mm)
Height shaft c.l. / foundation	:	210	(mm)
Propulsion efficiency	:	100	(N/kW)
(For and aft chocks capable of transmitting 3 times nominal propeller thrust must be installed)			
Correction / Safety factor	:	1,25	(-)
Special extended Vibracon SM-LP	:	42	(-)
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Advised extended Vibracon SM-LP	:	42	(-)
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Element load (maximum)	:	127,00	(kN)
Element load (minimum)	:	-42,00	(kN)
Machine load	:	158,75	(kN)

Calculation of holding down bolts' torque**Foundation stud bolt**

Foundation bolts	:	10 * M42 x 4,5 (L = 443 mm)	(-)
Material	:	42CrMo4V	(-)
E-modul	:	207000	(N/mm ²)
Yield stress	:	640	(N/mm ²)
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Elongation foundation stud bolt	:	0,375	(mm)
Tension per bolt	:	321	(kN)
Tensile stress	:	308	(N/mm ²)
Utilized yield stress	:	48	(%)
Von Mises stress (tensile / torsion)	:	362	(N/mm ²)
Utilized yield stress < 90 %	:	57	(%)
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Tightening torque	:	2700	(Nm)

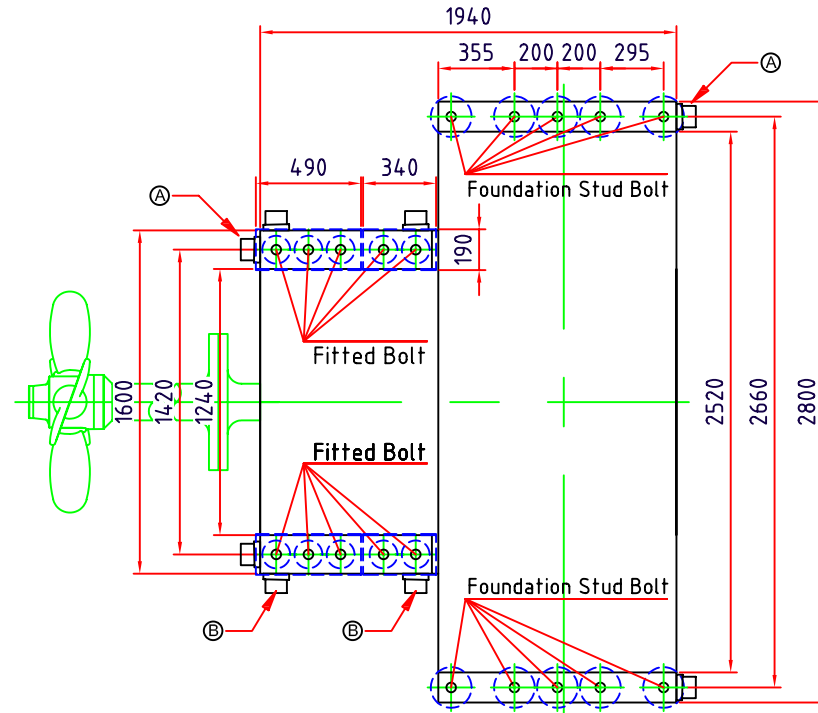
Fitted stud bolt

Fitted bolts	:	10 * M52 x 5 (L = 379 mm)	(-)
Material	:	42CrMo4V	(-)
E-modul	:	207000	(N/mm ²)
Yield stress	:	640	(N/mm ²)
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Elongation of fitted stud bolt	:	0,240	(mm)
Tension per bolt	:	433	(kN)
Tensile stress	:	262	(N/mm ²)
Utilized yield stress	:	41	(%)
Von Mises stress (tensile / torsion)	:	308	(N/mm ²)
Utilized yield stress < 90%	:	48	(%)
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Tightening torque	:	4500	(Nm)

MS REF. NUMBER : N-09-0097-01d JW

SKETCH

Wärtsilä SCV128-SD65
47000 kg



PROJECT DATA

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(A) - Collision stopper (with wedge shaped chocks)
(B) - Steel side stopper (with wedge shaped chocks)
Stopper clearances in accordance with manufacturer instructions

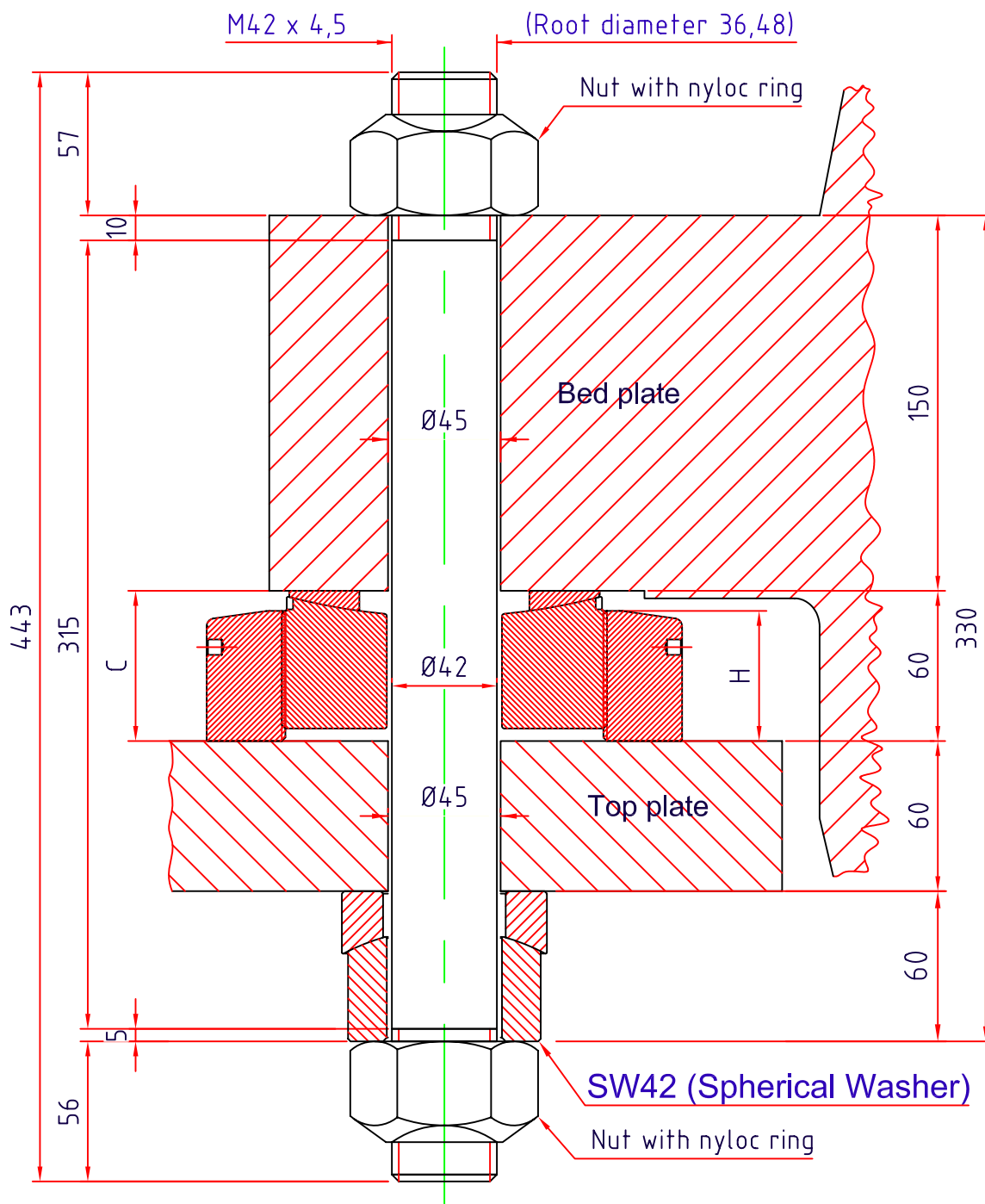
VIBRACON DATA

Vibracon Type : SM 42 LP
Extended Bottom Ring (H = 52 mm)
Maximum adjustment : 10 mm
Minimum height : 55 mm
Maximum height : 65 mm

APPROVAL

MS REF NUMBER: N-09-0097-01d JW

SKETCH



C - Not to exceed 65 mm

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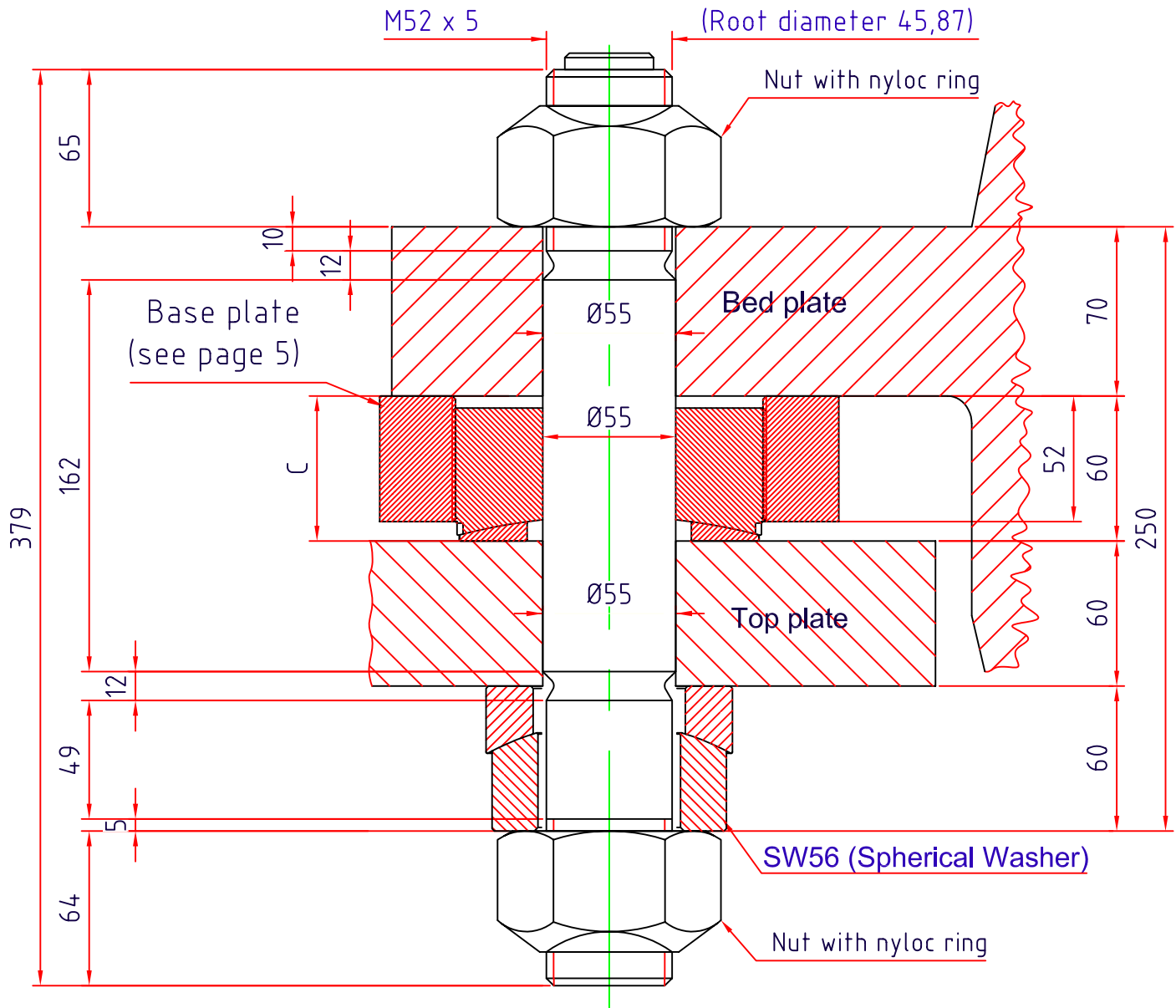
FOUNDATION STUD BOLT

APPROVAL

Bolt material	: 42CrMo4V
Yield strength	: 640 N/mm ²
Size of foundation bolt	: 10 * M42 x 4,5 (L = 443 mm)
Stretch	: 0,38 mm
Tightening torque	: 2700 Nm
Shipyard / customer	: STX Europe Langsten AS
Shipname / project	: STX-NOL 731 - 732
Classification society	: Det Norske Veritas
Object	: Gearbox
Make / type	: Wärtsilä SCV128-SD65

Calculations are valid for bolts with ISO Metric screw thread and coarse pitch, minimum material grade 8.8, yield strength > 630 N/mm², oil lubricated thread courses and nut mating surfaces without slide additives.

SKETCH



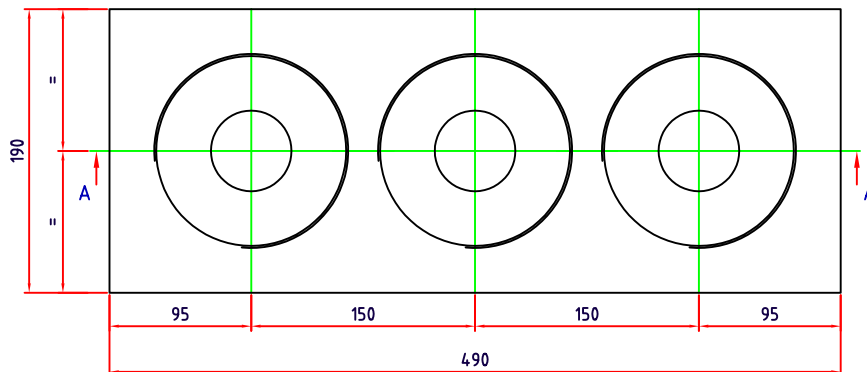
C - Not to exceed 65 mm

MS REF NUMBER: N-09-0097-01d JW	FITTED STUD BOLT	APPROVAL
	<p>Bolt material : 42CrMo4V Yield strength : 640 N/mm² Size of fitted bolt : 10 * M52 x 5 (L = 379 mm) Stretch : 0,24 mm Tightening torque : 4500 Nm Shipyard / customer : STX Europe Langsten AS Shipname / project : STX-NOL 731 - 732 Classification society : Det Norske Veritas Object : Gearbox Make / type : Wärtsilä SCV128-SD65</p>	

Calculations are valid for bolts with ISO Metric screw thread and coarse pitch, minimum material grade 8.8, yield strength > 630 N/mm², oil lubricated thread courses and nut mating surfaces without slide additives

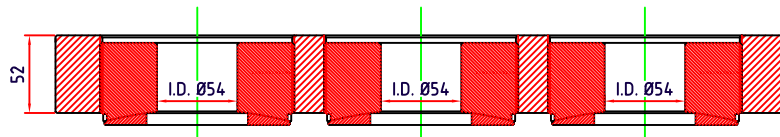
SKETCH

Base Plate with SM42LP Center Plate and Top Plate

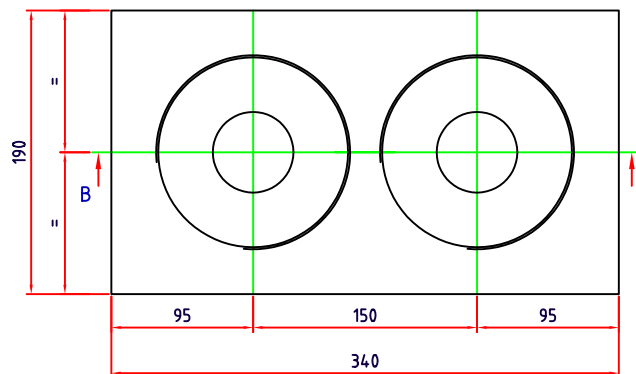


Number of base plates : 2
Material : 42CrMo4V

SECTION A-A

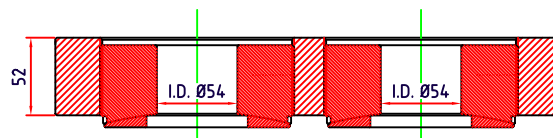


Base Plate with SM42LP Center Plate and Top Plate



Number of base plates : 2
Material : 42CrMo4V

SECTION B-B



MS REF NUMBER: N-09-0097-01d JW

BASE PLATE + Center & Top Plate

APPROVAL

Bolt material	: 42CrMo4V
Yield strength	: 640 N/mm ²
Size of fitted bolt	:
Stretch	:
Tightening torque	:
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