

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\2_tse_stir_cor-AAT-DRB *TA: 1:07 min Coil Selection: Auto Voxel Size: 0.4×0.4×5.0 mm³ Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L2.1 A36.1 F25.3 mm
Orientation	C > S2.0 > T-0.2
Phase Encoding Dir.	H >> F
Phase Oversampling	100 %
FoV Read	280 mm
FoV Phase	100.0 %
Slice Thickness	5.0 mm
TR	3370.0 ms
TE	48.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3370.0 ms
TE	48.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	140 ms
Freeze Suppr. Tissue	Off
Flip Angle	135 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	280 mm
FoV Phase	100.0 %
Slice Thickness	5.0 mm
Base Resolution	320
Phase Resolution	90 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	26
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L2.1 A36.1 F25.3 mm
Orientation	C > S2.0 > T-0.2
Phase Encoding Dir.	H >> F
Phase Oversampling	100 %
FoV Read	280 mm
FoV Phase	100.0 %
Slice Thickness	5.0 mm
TR	3370.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L2.1 A36.1 F25.3 mm
Orientation	C > S2.0 > T-0.2
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L2.1 A36.1 F25.3
L	2.1 mm
A	36.1 mm
F	25.3 mm
Initial Orientation	C > S
C > S	2.00

Geometry - AutoAlign

> T	-0.20
Initial Rotation	-91.18 deg

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	25 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L2.1 A36.1 F25.3 mm
Orientation	C > S2.0 > T-0.2
Rotation	-91.19 deg
F >> H	280 mm
R >> L	280 mm
A >> P	165 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3370.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	140 ms
Dark Blood	Off
FoV Read	280 mm
FoV Phase	100.0 %
Phase Resolution	90 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	326 Hz/Px
Echo Spacing	6.02 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	11
Echo Trains per Slice	19

Sequence - Part 2

Introduction	Off
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off

Sequence - Part 2

Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	140 deg
Allowed Delay	30 s

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\1_tse_tra-AAT-DRB *TA: 1:46 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	R >> L
Phase Oversampling	80 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	548.0 ms
TE	18.00 ms
Averages	2
Concatenations	2
AutoAlign	---

Contrast - Common

TR	548.0 ms
TE	18.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	142 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	272
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	R >> L
Phase Oversampling	80 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	548.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	R7.2 A72.5 F4.8
R	7.2 mm
A	72.5 mm
F	4.8 mm
Initial Orientation	T > S
T > S	-2.60

Geometry - AutoAlign

> C	0.80
Initial Rotation	90.31 deg

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	5 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	548.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tse_rr
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	219 Hz/Px
Echo Spacing	8.98 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	47

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	150 deg
Allowed Delay	30 s

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\t2_tse_tra-AAT-DRB *TA: 1:35 min Coil Selection: Auto Voxel Size: 0.3x0.3x4.0 mm³ Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	320
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	30
Deep Resolve	On
Phase Partial Fourier	Off

Routine

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	R >> L
Phase Oversampling	60 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4940.0 ms
TE	79.00 ms
Averages	2
Concatenations	1
AutoAlign	---

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	R >> L
Phase Oversampling	60 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4940.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Contrast - Common

TR	4940.0 ms
TE	79.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	140 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	200 mm
----------	--------

Geometry - AutoAlign

Slice Group	1
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	R7.2 A72.5 F4.8
R	7.2 mm
A	72.5 mm
F	4.8 mm
Initial Orientation	T > S
T > S	-2.60
> C	0.80

Geometry - AutoAlign

Initial Rotation	90.31 deg
------------------	-----------

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	5 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4940.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tseR_rs
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	Slice
Bandwidth	260 Hz/Px
Echo Spacing	9.92 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	14
Echo Trains per Slice	9

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	140 deg
Allowed Delay	30 s

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\t1_tse_dixon_tra-AAT-DRG *TA: 2:08 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	A >> P
Phase Oversampling	150 %
FoV Read	240 mm
FoV Phase	86.1 %
Slice Thickness	4.0 mm
TR	1040.0 ms
TE	8.50 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	1040.0 ms
TE	8.50 ms
MTC	Off
Magn. Preparation	None
Flip Angle	127 deg
Fat-Water Contrast	Dixon
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	240 mm
FoV Phase	86.1 %
Slice Thickness	4.0 mm
Base Resolution	288
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off
Asymmetric Echo	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	A >> P
Phase Oversampling	150 %
FoV Read	240 mm
FoV Phase	86.1 %
Slice Thickness	4.0 mm
TR	1040.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	R7.2 A72.5 F4.8
R	7.2 mm
A	72.5 mm
F	4.8 mm
Initial Orientation	T > S

Geometry - AutoAlign

T > S	-2.60
> C	0.80
Initial Rotation	0.31 deg

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	5 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Performance
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Auto
Adjustment Tolerance	None
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Rotation	0.31 deg
A >> P	207 mm
R >> L	240 mm
F >> H	169 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	1040.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Dixon
Magn. Preparation	None
Dark Blood	Off
FoV Read	240 mm
FoV Phase	86.1 %
Phase Resolution	80 %

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tse
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	965 Hz/Px
Echo Spacing	8.46 ms
Asymmetric Echo	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	61

Sequence - Part 2

Introduction	Off
Phase Correction	Off
Red. EC Sensitivity	Off
Reduce Motion Sens.	On

Sequence - Assistant

SAR Assistant	Flip Angle > TR
Min Flip Angle	120 deg
Max. TR	750.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\resolve_diff_b50_800_tra-AAT-SMS *TA: 2:38 min Coil Selection: Auto Voxel Size: 1.1×1.1×4.0 mm³ Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	280 mm
FoV Phase	85.9 %
Slice Thickness	4.0 mm
TR	3120.0 ms
TE 1	51 ms
TE 2	80 ms
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3120.0 ms
TE 1	51 ms
TE 2	80 ms
MTC	Off
Magn. Preparation	None
Flip Angle	180 deg
Fat-Water Contrast	SPAIR
Fat Saturation	Strong
Contrasts	2
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1

Resolution - Common

FoV Read	280 mm
FoV Phase	85.9 %

Resolution - Common

Slice Thickness	4.0 mm
Base Resolution	128
Phase Resolution	100 %
Interpolation	On

Resolution - Acceleration

Accel. Mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	55
SMS Factor	2
FOV Shift Factor	3
Phase Partial Fourier	Off
Readout Partial Fourier	7/8
Readout Segments	7

Resolution - Filter

Raw Filter	On
Distortion Correction	2D
Normalize	Prescan
Noise Masking	On

Geometry - Common

Slice Group	1
Slices	32
Distance Factor	33 %
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	280 mm
FoV Phase	85.9 %
Slice Thickness	4.0 mm
TR	3120.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	R7.2 A72.5 F4.8
R	7.2 mm
A	72.5 mm
F	4.8 mm
Initial Orientation	T > S
T > S	-2.60

Geometry - AutoAlign

> C	0.80
Initial Rotation	0.31 deg

Geometry - Saturation

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	5 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard Neck
CoilShim	Auto
Adjustment Tolerance	None
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	R7.2 A72.5 F4.8 mm
Orientation	T > S-2.6 > C0.8
Rotation	0.31 deg
A >> P	61 mm
R >> L	280 mm
F >> H	169 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	3.000

Physio - Signal

1st Signal/Mode	None
TR	3120.0 ms
Concatenations	1

Diff

Diffusion Mode	3D Diagonal
----------------	-------------

Diff

Diff. Directions	1
Diffusion Scheme	Monopolar
Diff. Weightings	2
b-value 1	50 s/mm ²
b-value 2	800 s/mm ²
Averages 1	1
Averages 2	6
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	Off
ADC Maps	On
Exponential ADC Maps	Off
b-value >=	0 s/mm ²
ADC Noise Threshold	5
Noise Masking	On
Calculated Image	Off

Sequence - Part 1

Sequence Name	resolve
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Bandwidth	930 Hz/Px
Echo Spacing	0.30 ms
Optimization	Min. TE
EPI Factor	55

Sequence - Part 2

Introduction	On
Reacquisition Mode	Off

Sequence - Assistant

SAR Assistant	Off
Optimization	Min. TE

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\1_tse_tra-AAT-DRB *TA: 2:37 min Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	32
Distance Factor	33 %
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	R >> L
Phase Oversampling	80 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	548.0 ms
TE	18.00 ms
Averages	3
Concatenations	2
AutoAlign	---

Contrast - Common

TR	548.0 ms
TE	18.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	160 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	272
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	32
Distance Factor	33 %
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	R >> L
Phase Oversampling	80 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	548.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	L0.1 A3.1 H14.4
L	0.1 mm
A	3.1 mm
H	14.4 mm
Initial Orientation	T > C
T > C	1.80

Geometry - AutoAlign

> S	1.20
Initial Rotation	91.48 deg

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	14 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	548.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tse_rr
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	219 Hz/Px
Echo Spacing	8.98 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	47

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	150 deg
Allowed Delay	30 s

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\t2_tse_tra-AAT-DRB *TA: 2:28 min Coil Selection: Auto Voxel Size: 0.3×0.3×3.0 mm³ Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	320
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	30
Deep Resolve	On
Phase Partial Fourier	Off

Routine

Slice Group	1
Slices	32
Distance Factor	33 %
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	R >> L
Phase Oversampling	60 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	5230.0 ms
TE	84.00 ms
Averages	3
Concatenations	1
AutoAlign	---

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	32
Distance Factor	33 %
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	R >> L
Phase Oversampling	60 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	5230.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Contrast - Common

TR	5230.0 ms
TE	84.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	160 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	200 mm
----------	--------

Geometry - AutoAlign

Slice Group	1
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	L0.1 A3.1 H14.4
L	0.1 mm
A	3.1 mm
H	14.4 mm
Initial Orientation	T > C
T > C	1.80
> S	1.20

Geometry - AutoAlign

Initial Rotation	91.48 deg
------------------	-----------

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	14 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	5230.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tseR_rs
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	Slice
Bandwidth	260 Hz/Px
Echo Spacing	10.5 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	14
Echo Trains per Slice	9

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	140 deg
Allowed Delay	30 s

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\resolve_diff_b50_800_tra-AAT-SMS *TA: 2:21 min Coil Selection: Auto Voxel Size: 1.1×1.1×6.0 mm³ Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	20
Distance Factor	20 %
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	280 mm
FoV Phase	85.9 %
Slice Thickness	6.0 mm
TR	2900.0 ms
TE 1	51 ms
TE 2	80 ms
Concatenations	1
AutoAlign	---

Contrast - Common

TR	2900.0 ms
TE 1	51 ms
TE 2	80 ms
MTC	Off
Magn. Preparation	None
Flip Angle	180 deg
Fat-Water Contrast	SPAIR
Fat Saturation	Strong
Contrasts	2
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1

Resolution - Common

FoV Read	280 mm
FoV Phase	85.9 %

Resolution - Common

Slice Thickness	6.0 mm
Base Resolution	128
Phase Resolution	100 %
Interpolation	On

Resolution - Acceleration

Accel. Mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	55
SMS Factor	2
FOV Shift Factor	3
Phase Partial Fourier	Off
Readout Partial Fourier	7/8
Readout Segments	7

Resolution - Filter

Raw Filter	On
Distortion Correction	2D
Normalize	Prescan
Noise Masking	On

Geometry - Common

Slice Group	1
Slices	20
Distance Factor	20 %
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	280 mm
FoV Phase	85.9 %
Slice Thickness	6.0 mm
TR	2900.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L0.1 A3.1 H14.4
L	0.1 mm
A	3.1 mm
H	14.4 mm
Initial Orientation	T > C
T > C	1.80

Geometry - AutoAlign

> S	1.20
Initial Rotation	1.48 deg

Geometry - Saturation

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	14 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard Neck
CoilShim	Auto
Adjustment Tolerance	None
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L0.1 A3.1 H14.4 mm
Orientation	T > C1.8 > S1.2
Rotation	1.48 deg
A >> P	61 mm
R >> L	280 mm
F >> H	143 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	3.000

Physio - Signal

1st Signal/Mode	None
TR	2900.0 ms
Concatenations	1

Diff

Diffusion Mode	3D Diagonal
----------------	-------------

Diff

Diff. Directions	1
Diffusion Scheme	Monopolar
Diff. Weightings	2
b-value 1	50 s/mm ²
b-value 2	800 s/mm ²
Averages 1	1
Averages 2	6
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	Off
ADC Maps	On
Exponential ADC Maps	Off
b-value >=	0 s/mm ²
ADC Noise Threshold	5
Noise Masking	On
Calculated Image	Off

Sequence - Part 1

Sequence Name	resolve
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Bandwidth	930 Hz/Px
Echo Spacing	0.30 ms
Optimization	Min. TE
EPI Factor	55

Sequence - Part 2

Introduction	On
Reacquisition Mode	Off

Sequence - Assistant

SAR Assistant	Off
Optimization	Min. TE

\\MR Physics 2 - AAT\Neck\Neck all\AAT options\t2_sag-AAT-DRB *TA: 1:40 min Coil Selection: Auto Voxel Size: 0.3×0.3×3.0 mm³ Acc:: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

Resolution - Common

FoV Phase	84.4 %
Slice Thickness	3.0 mm
Base Resolution	320
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Routine

Slice Group	1
Slices	24
Distance Factor	33 %
Position	L3.6 A23.6 F3.0 mm
Orientation	S > T1.8 > C-1.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	200 mm
FoV Phase	84.4 %
Slice Thickness	3.0 mm
TR	3920.0 ms
TE	74.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	24
Distance Factor	33 %
Position	L3.6 A23.6 F3.0 mm
Orientation	S > T1.8 > C-1.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	200 mm
FoV Phase	84.4 %
Slice Thickness	3.0 mm
TR	3920.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Contrast - Common

TR	3920.0 ms
TE	74.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	160 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	200 mm
----------	--------

Geometry - AutoAlign

Slice Group	1
Position	L3.6 A23.6 F3.0 mm
Orientation	S > T1.8 > C-1.8
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L3.6 A23.6 F3.0
L	3.6 mm
A	23.6 mm
F	3.0 mm
Initial Orientation	S > T
S > T	1.80
> C	-1.80

Geometry - AutoAlign

Initial Rotation	89.46 deg
------------------	-----------

Geometry - Navigator**Geometry - Saturation**

Special Saturation	None
--------------------	------

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	3 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3920.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	84.4 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

Inline - MIP

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

Inline - Composing

Inline Composing	Off
------------------	-----

Sequence - Part 1

Sequence Name	tseR_rs
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	Slice
Bandwidth	260 Hz/Px
Echo Spacing	10.5 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	14
Echo Trains per Slice	24

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	140 deg
Allowed Delay	30 s