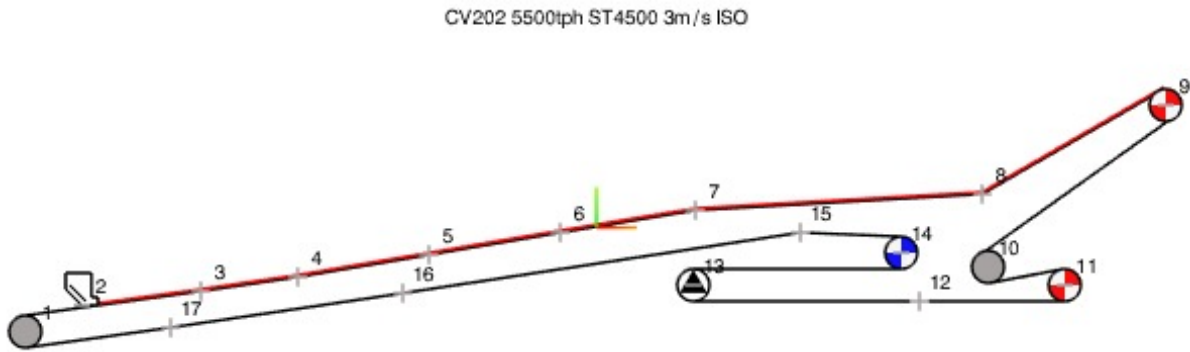


Project	Demo 16 ABC Iron Ore Mine	Client	ABC Mining Ltd
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**Dynamic Analysis Stopping - Braking - Loaded**

Dynamic Belt Inputs		Dynamic Calculation Inputs	
Belt Modulus	<b>324000</b> kN/m	Calculation Run Time	<b>25</b> seconds
Conveyor Belt Spring Constant K	<b>583200000</b>	Start / Stop Ref Time (Tref)	<b>10.0</b> seconds
Max Conveyor Element length	<b>400</b> m	Time Step Interval dt	<b>0.1</b> seconds
Dynamic Friction f adjustment	<b>1</b>	Viscoelastic Delay Time Tau	<b>0.0105551</b>
Total Moving System Mass	<b>6683507</b> kg	Viscoelastic Damping Constant	<b>6155737</b> N/m/s
<input type="checkbox"/> Use Runge-Kutta 4th order ODE solver		Runge-Kutta internal step size	<b>0.001</b>

**Takeup Mass & Lockup Capstan Winch (Optional)**

Takeup Mass Static Calculations	<b>43000</b> kg	Average Tension Running Full	<b>489.21</b> kN
Takeup Tension Static Calculations	<b>210.84</b> kN	Average Tension Belt Stationary	<b>207.51</b> kN
Capstan/Winch Appl. Time Delay	<b>0.5</b> seconds	Belt Stretch Tension Available	<b>281.70</b> kN
Additional Tension to add at takeup for Capstan / Winch Locking			<b>0</b> kN
<input type="checkbox"/> Lock-up Takeup Weight Rope with winch during Stopping			

Drive No: 1 Head	Pulley No:9	Drive Inertia	
Starter / Brake Delay Time	<b>0</b> s	Motor Inertia	<b>30</b> kg-m2
Load Share on Drive Pulley	<b>67</b> %	High Speed Coupling Inertia	<b>0</b> kg-m2
Number of Motors on Drive Pulley	<b>2</b>	High Speed Brake Disc Inertia	<b>0.00</b> kg-m2
Motor Power Rating	<b>1000</b> kW	Flywheel Inertia	<b>500</b> kg-m2
Low Speed Braking Torque	<b>0</b> kN/m	Gearbox Inertia (HSS)	<b>4.88094</b> kg-m2
Starter Category	<b>VVVF 150 sec HDCV55</b>	Total Drive Inertia	<b>1073.7619</b> kg-m2
Starter Description	<b>Dwell 150s Starter</b>	Total Drive Equivalent Mass	<b>1269390</b> kg
Starter Type	<b>Speed-Time</b>	<input checked="" type="checkbox"/> Holdback is installed on Drive	

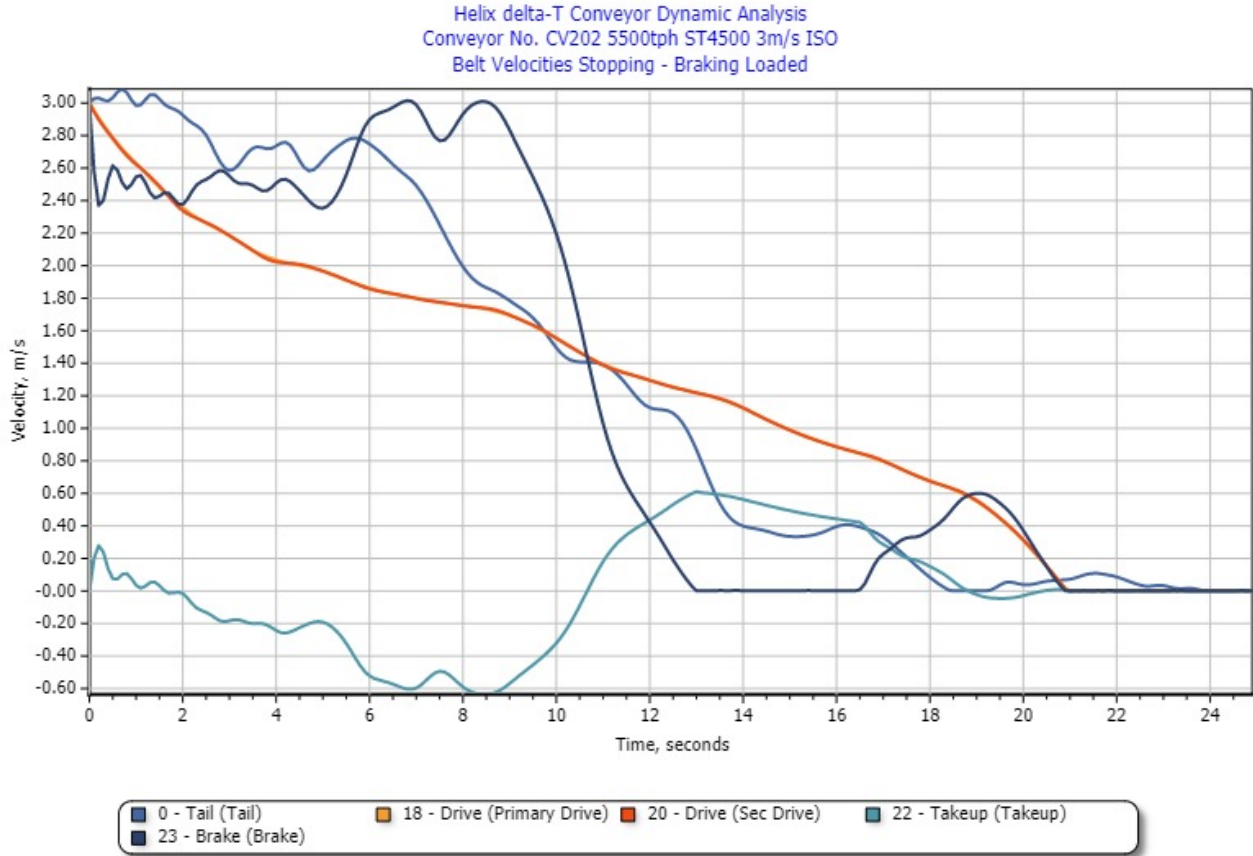
Drive No: 2 Return	Pulley No:11	Drive Inertia	
Starter / Brake Delay Time	<b>0</b> s	Motor Inertia	<b>30</b> kg-m2
Load Share on Drive Pulley	<b>33</b> %	High Speed Coupling Inertia	<b>0</b> kg-m2
Number of Motors on Drive Pulley	<b>1</b>	High Speed Brake Disc Inertia	<b>0.00</b> kg-m2
Motor Power Rating	<b>1000</b> kW	Flywheel Inertia	<b>500</b> kg-m2
Low Speed Braking Torque	<b>0</b> kN/m	Gearbox Inertia (HSS)	<b>4.88094</b> kg-m2
Starter Category	<b>Slave Drive Starter</b>	Total Drive Inertia	<b>536.8809</b> kg-m2
Starter Description	<b>Slave Drive Starter example</b>	Total Drive Equivalent Mass	<b>634695</b> kg
Starter Type	<b>Torque-Speed</b>	<input checked="" type="checkbox"/> Holdback is installed on Drive	

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<b>Drive No: 3 Brake</b>		Pulley No:14	<b>Drive Inertia</b>	
Starter / Brake Delay Time	<b>0</b> s	Motor Inertia	<b>1</b> kg-m2	
Load Share on Drive Pulley	<b>0</b> %	High Speed Coupling Inertia	<b>0</b> kg-m2	
Number of Motors on Drive Pulley	<b>0</b>	High Speed Brake Disc Inertia	<b>47.94</b> kg-m2	
Motor Power Rating	<b>0</b> kW	Flywheel Inertia	<b>0</b> kg-m2	
Low Speed Braking Torque	<b>70</b> kN/m	Gearbox Inertia (HSS)	<b>0</b> kg-m2	
Starter Category	<b>Slave Drive Starter</b>	Total Drive Inertia	<b>0.01</b> kg-m2	
Starter Description	<b>Slave Drive Starter example</b>	Total Drive Equivalent Mass	<b>0</b> kg	
Starter Type	<b>Torque-Speed</b>	<input type="checkbox"/> Holdback is installed on Drive		

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**Dynamic Analysis Velocity Graphs**

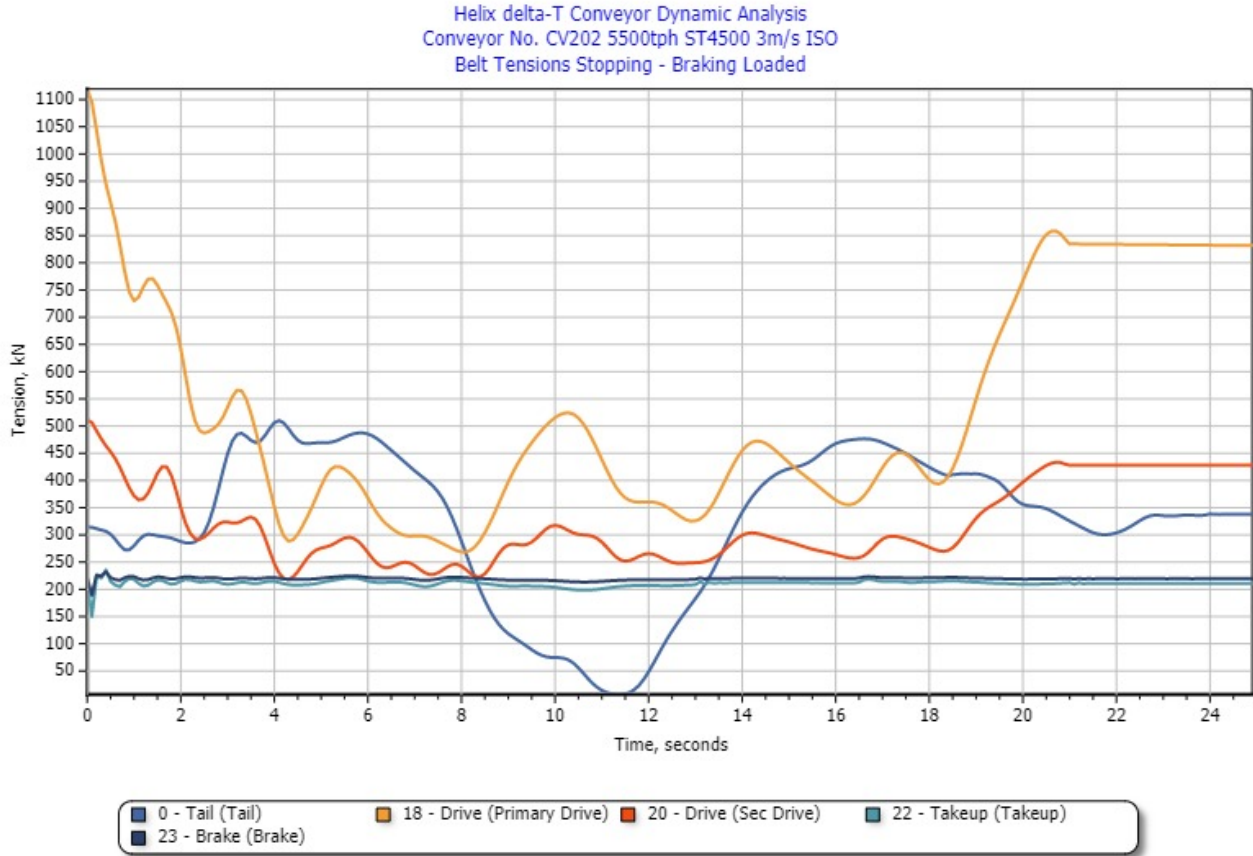


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**Graph Comments Stopping - Braking - Loaded**

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**Dynamic Analysis Belt Tension Graphs**



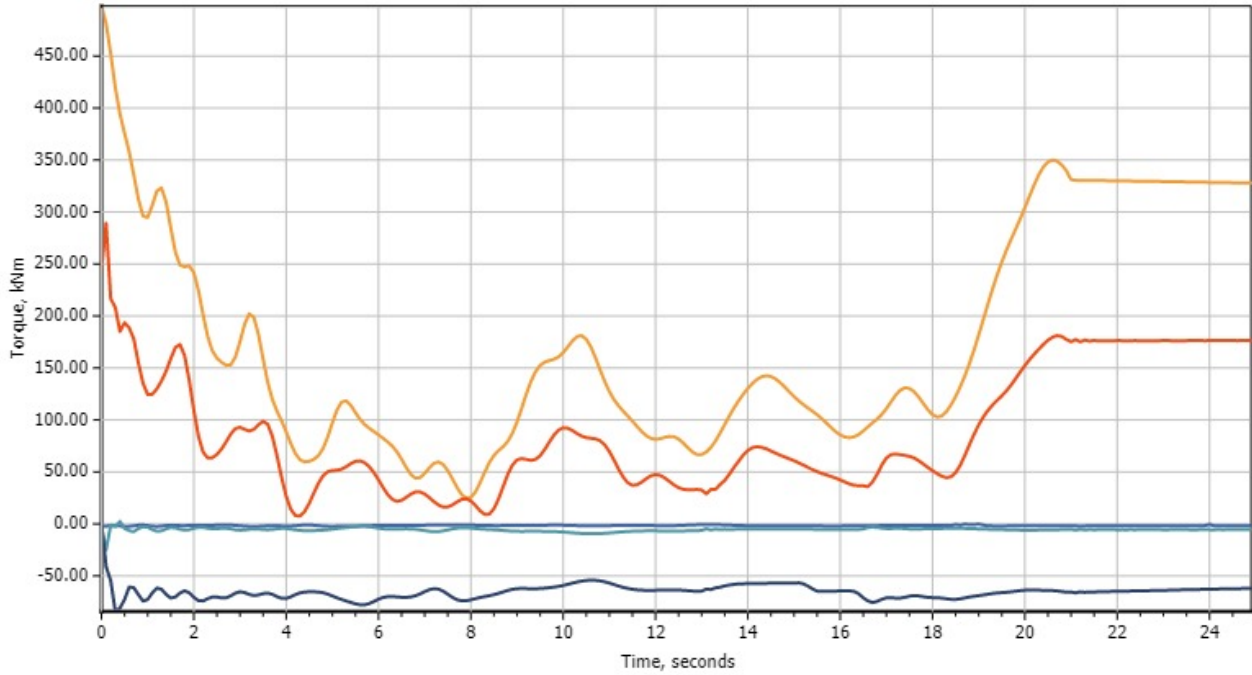
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**Graph Comments Stopping - Braking - Loaded**

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**Dynamic Analysis Pulley Torque Graphs**

Helix delta-T Conveyor Dynamic Analysis  
Conveyor No. CV202 5500tph ST4500 3m/s ISO  
Pulley Torque Stopping - Braking Loaded



- 0 - Tail (Tail)
- 18 - Drive (Primary Drive)
- 20 - Drive (Sec Drive)
- 22 - Takeup (Takeup)
- 23 - Brake (Brake)

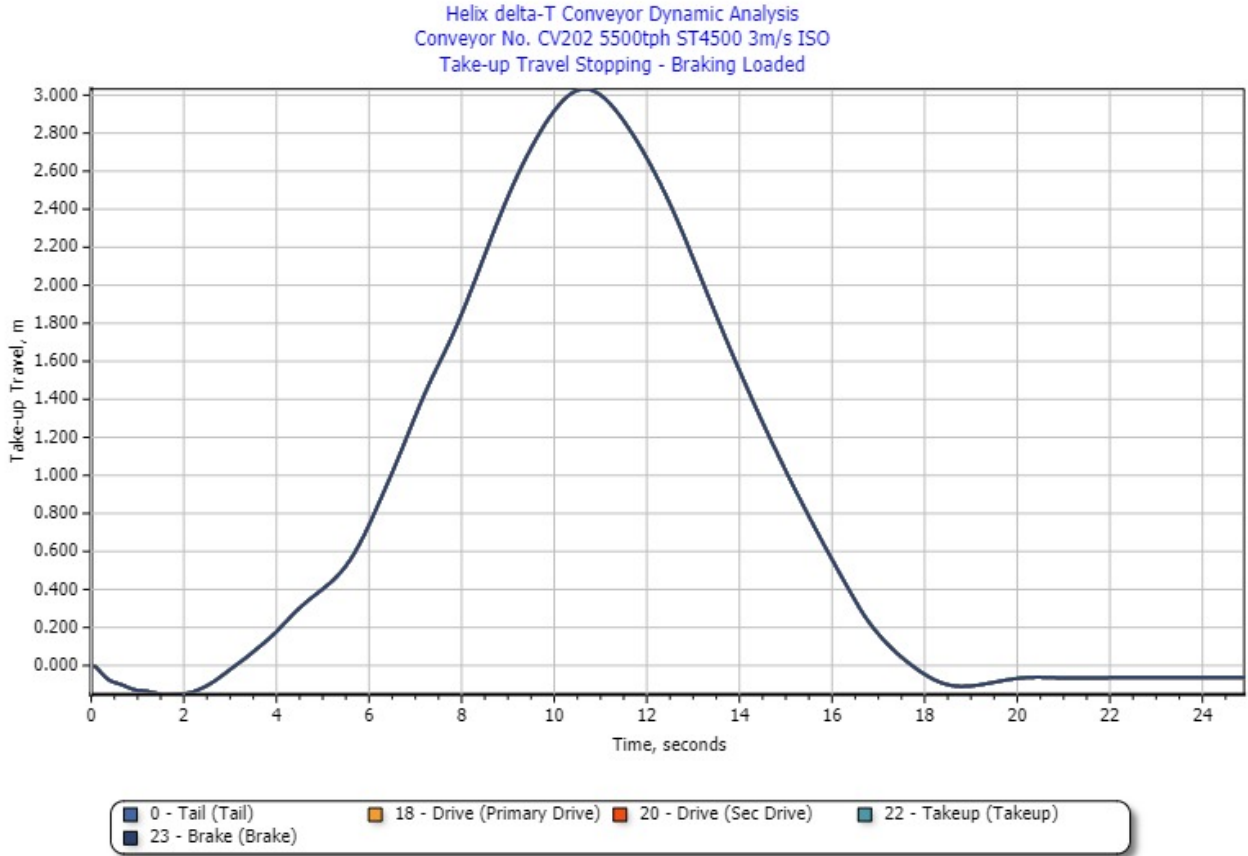
Maximum Torque = 498.11 kNm Minimum Torque = -84.16 kNm

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**Graph Comments Stopping - Braking - Loaded**

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**Dynamic Analysis Take-up Travel Graph**



Maximum Take-up Travel Distance = 3.184 m

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**Graph Comments Stopping - Braking - Loaded**

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**Dynamic Analysis Belt Tensions Stopping - Braking - Loaded**

**Maximum and Minimum Dynamic Belt Tension Table**

	Max kN	Min kN
0 - Tail (Tail)	510.05	6.90
1 - Hopper (Hopper)	513.36	8.95
2 - Int. Pt ()	523.99	16.22
3 - Int. Pt (CH300)	592.02	4.32
4 - Sect 4/1 (CH300)	609.58	53.70
5 - Int. Pt (CH1000)	664.73	22.78
6 - Sect 5/1 (CH1000)	641.13	68.87
7 - Sect 5/2 (CH1000)	583.65	59.46
8 - Sect 5/3 (CH1000)	620.54	70.13
9 - Sect 5/4 (CH1000)	636.60	66.08
10 - Int. Pt (CH3000)	714.01	119.02
11 - Sect 6/1 (CH3000)	739.81	102.91
12 - Sect 6/2 (CH3000)	776.29	145.09
13 - Sect 6/3 (CH3000)	846.78	123.39
14 - Int. Pt (CH4700)	906.55	131.04
15 - Sect 7/1 (CH4700)	906.55	173.17
16 - Sect 7/2 (CH4700)	961.76	173.36
17 - Int. Pt (CH6000 IP)	1040.10	196.84
18 - Drive (Primary Drive)	1119.31	268.57
19 - Snub (Snub)	505.87	212.63
20 - Drive (Sec Drive)	511.34	217.94
21 - Int. Pt ()	235.63	150.27
22 - Takeup (Takeup)	235.63	150.27
23 - Brake (Brake)	231.92	189.28
24 - Int. Pt (Brake T2)	359.22	217.56
25 - Sect 15/1 (Brake T2)	386.14	217.56
26 - Sect 15/2 (Brake T2)	410.82	202.77
27 - Int. Pt (CH4700 rtn)	424.06	168.90
28 - Sect 16/1 (CH4700 rtn)	440.03	142.70
29 - Sect 16/2 (CH4700 rtn)	447.34	121.63
30 - Sect 16/3 (CH4700 rtn)	441.41	100.92
31 - Sect 16/4 (CH4700 rtn)	449.86	84.28
32 - Sect 16/5 (CH4700 rtn)	459.33	71.16
33 - Sect 16/6 (CH4700 rtn)	472.91	55.79
34 - Sect 16/7 (CH4700 rtn)	473.10	42.37
35 - Sect 16/8 (CH4700 rtn)	469.14	33.07
36 - Int. Pt (CH1000 rtn)	488.43	22.49
37 - Sect 17/1 (CH1000 rtn)	499.93	15.23
38 - Sect 17/2 (CH1000 rtn)	502.05	10.91

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**Maximum and Minimum Dynamic Belt Tension Table****Max kN****Min kN**