

## ORDER MATCHING WITH CONTINUOUS TRADE MATCHING ALGORITHM

### Intro

If an order arrives in the order book of a security, it may immediately match with a counter-order should the principle of price and time priority allow matching. If the order cannot match, it remains in the order book

### **Limit order**

A limit order will match against the best order of the opposite direction existing in the order book if the orders meet all requirements.

BUY				SELL			
Sequence of order entry	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of order entry
8	25	25	5645	5640	20	20	6
2	35	10	5630	5645	35	55	4
1	50	15	5625	5655	10	65	7
3	58	8	5610				
5	98	40	5600				

The incoming bid (sequence no.8) matches orders no.6 and 4 as shown below:

Price	Traded volume
5640	20
5645	5

### Market order in MMTS I (Cash market)

An incoming market order (with no price specified) will match against opposite orders at the best price level only.

BUY				SELL			
Sequence of order entry	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of order entry
8	25	25	5645	Market	40	40	9
2	35	10	5630	5650	20	50	6
1	50	15	5625	5655	35	85	4
3	58	8	5610	5665	10	95	7
5	98	40	5600				

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The incoming offer (sequence no.9) matches against order no.8 as shown below:

Price	Traded volume
5645	25

The unmatched, residual quantity (15) of order no.9 is withdrawn from the order book.

### Market order in MMTS II (Derivative and Commodities markets)

An incoming market order (with no price specified) will match against opposite orders not only at the best price level but at subsequent price levels as well.

BUY				SELL			
Sequence of order entry	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of order entry
8	25	25	5645	Market	40	40	9
2	35	10	5630	5650	20	50	6
1	50	15	5625	5655	35	85	4
3	58	8	5610	5665	10	95	7
5	98	40	5600				

The incoming market sell order (sequence no.9) matches against orders at three different price levels as shown below:

Price	Traded volume
5645	25
5630	10
5625	5

The incoming market order matches buy orders no.8, 2 and 1 at the limit prices of the orders. In case of order no.1 the unmatched, residual quantity (10) remains in the order book.

### ALL-OR-NONE order

An incoming All-or-None (AON) order will match against one or more counter-order(s) only if it can be executed in its entirety. There is no partial transaction. If an AON order cannot match in full, it remains in the order book until executed.

### Case 1

BUY				SELL			
Sequence of order entry	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of order entry
8	35	AON 10000	5630	5630	1000	1000	2
1	50	15	5625	5650	20	1020	6
3	58	8	5610	5655	35	1055	4
5	98	40	5600	5665	10	1065	7

Though price levels overlap, the incoming AON order (sequence no.8) will not match against order no.2 as the quantity cannot be executed in full. Thus the order remains in the order book with 'open' status.

## Case 2

BUY				SELL			
Sequence of order entry	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of order entry
8	15000	AON 15000	5645	5635	1000	1000	4
1	15150	150	5630	5640	1500	2500	6
3	15200	50	5625	5645	AON 15000	17500	5
				5655	35	17535	7
				5665	10	17545	2

Though there are better price levels in the order book, the incoming AON order (sequence no.8) will match against AON order no.5 due to quantitative restrictions:

Price	Traded volume
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5645	15000
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## STOP order

A stop limit or stop market order is a conditional order which is entered into the order book only if a definite price (so-called trigger price) is reached. Trigger price is designated together with the limit price of the order.

BUY				SELL			
Sequence of order entry	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of order entry
4	10		5650	5645	S 5650	23	2
1	13	S 5650	5665	5650		10	3

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Orders no.1 and 2 are stop limit orders activated by the execution of orders no.3 and 4, and matched immediately as shown below:

Price	Traded volume
5650	10
5665	13