

Order Types and Functionality Guide

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Document Management

This document shall be updated on an annual basis, or with any newly introduced features or functionality, whichever occurs sooner, by the TMX Markets product & sales team. It is available in both English and French on the TMX website.

Scope

This document provides an overview of trading on all three TMX equity markets; Toronto Stock Exchange, TSX Venture Exchange, and TSX Alpha Exchange. It is intended to provide an introduction to the functional operation and order types of each market and serve as a reference for new and existing trading participants.

For details on becoming a member, fees, connectivity and technical specifications, or additional information related to trading, please refer to the links below or contact a TMX Account Manager.

REFERENCES

Link

TMX Trading Policies

http://tmx.complinet.com/en/tsx_rulebook.html
http://tmx.complinet.com/en/tsxv_rulebook.html
www.tsx.com/resource/en/1069

TMX Fee Schedule

www.tsx.com/trading/toronto-stock-exchange/fee-schedule
www.tsx.com/trading/tsx-venture-exchange/fee-schedule
www.tsx.com/trading/alpha/fee-schedule
www.tsx.com/trading/tsx-drk/fee-schedule

TMX Specifications (FIX Order Entry and STAMP Feeds) *available to registered users only

www.tmxwebstore.com/my-specifications

TSX DRK Liquidity Guide

www.tsx.com/trading/toronto-stock-exchange/order-types-and-features/dark-trading

TSX Market Making Program Guide

www.tsx.com/ebooks/en/market-making/

TMX Datalinx

www.tmxinfoservices.com

UMIR Rules

www.iiroc.ca/industry/rulebook/Pages/UMIR-Marketplace-Rules.aspx

Investment Industry Regulatory Organization of Canada

www.iiroc.ca

Ontario Securities Commission

www.osc.gov.on.ca

British Columbia Securities Commission

www.bcsc.bc.ca

Alberta Securities Commission

www.albertasecurities.com

Section 1 Overview

TMX Group operates three fully electronic marketplaces that represent the primary trading destinations of choice and sources of liquidity for equity trading in Canada.

Toronto Stock Exchange	Canada's primary market. The largest and most recognized source of liquidity for Canadian equity trading of senior board securities.
TSX Venture Exchange	Canada's public venture equity marketplace dedicated to trading junior equities from around the world during their early stages of growth.
TSX Alpha Exchange	TSX Alpha Exchange provides a competitive alternative for the active order flow of natural investors by promoting a higher quality of execution through increased fill certainty and sizes and lower trading costs.

Each marketplace is supported by TMX's proprietary Quantum XA technology platform, and offer different features, functionality, and pricing to offer choice and flexibility of execution to various trading participants.

1.1 Key Contacts

The TMX Markets Account Management team is your resource for information on being a Participating Organization / Member of TMX's equity marketplaces, new trading products and services, and how to access Canada's capital markets efficiently. We are dedicated to providing Participating Organizations / Members and the investment community with a high level of customer service and support. Support is available from 7:00 a.m. – 5:30 p.m. on all trading days.

CONTACT	Phone	Email
Account Management	1 877 421-2369	trading_sales@tmx.com
Trading Services	416 947-4357	trading_services@tmx.com
Vendor Services	416 947-4705	vendor_services@tmx.com

1.2 Regulation

The Investment Industry Regulatory Organization of Canada (IIROC) is the self-regulatory organization (SRO) which oversees all trading activity on TMX's equity marketplaces. IIROC regulates securities trading and market-related activities of participants, and administers and enforces the Universal Market Integrity Rules (UMIR) which applies to all participants trading on TMX Group equity marketplaces. All markers, identifiers, and order types required by UMIR and/or IIROC are supported by TMX's equity marketplaces.

1.3 Order and Trade Reporting

Order and trade messages which include both public and private data may be submitted to the TMX through the TSX FIX order entry protocol through the client's order entry connection. Corresponding responses will be sent to the client through this connection.

TMX also provides a broadcast feed which provides real-time public trade and quote, as well as the participant's private data associated with all its trades and orders.

TMX provides real-time market data feeds in the proprietary STAMP and TMX eXtreme Message Transfer (XMT) protocols. STAMP Level 2 data feed is a real-time data transmission service that provides pre- and post-trade data delivered in a tag based data format and variable record length messages. TMX XMT Level 1 and Level 2 data feeds are a real-time data transmission service that provides pre- and post-trade data delivered in a binary data format and fixed record length messages.

Level 1 content includes equity quote and equity trade information. Level 2 content includes full depth of book equity order and trade information.

Section 2 Trading Sessions

2.1 Hours of Operation

The following trading session hours of operation are as follows:

TSX and TSX Venture Exchange

TIME (ET)	Session
7:00 AM – 9:30 AM	Pre Open – Orders may be entered, but will not be executed. The COP is displayed and continuously updated.
9:30 AM	Market on Open (MOO) – All matching orders are executed at a single opening trade price. Any remaining orders not filled during the opening, with the exception of Limit on Open orders, are carried through to the continuous limit order book.
9:30 AM – 4:00 PM	Continuous Trading – All regular order types are accepted.
3:50 PM – 4:00 PM	Market On Close (MOC) – The MOC facility consists of 2 market states: 3:50 pm Imbalance Period – Allow entry of new Market on Close orders, with no cancels or amends. Allow entry of Limit on Close orders on either side and with any volume, with no cancels and aggressive price amends only. 3:56 pm Freeze Period – The Freeze Period begins simultaneously across all symbols at a random point between 3:56 pm and 3:57 pm. Allow entry of Limit on Close orders on either side and with any volume, with no cancels or amends. Limit on Close orders entered are treated as “Pegged LOC orders”, which means that if the price is more aggressive than the MOC Reference Price, then it is repriced to the MOC Reference Price. Imbalance messages are published every 10 seconds during this time. Trades publish at 4:00 unless a Price Movement Extension is required.
4:00 PM – 4:10 PM	Price Movement Extension – The PME period is designed to solicit further liquidity to offset a remaining imbalance. If the calculated closing price (“CCP”) exceeds the PME range and requires a Price Movement Extension, a new MOC imbalance is calculated and published after which LOC orders opposite to the imbalance are accepted subject to a new price collar. If the new CCP does not exceed the CPA parameters, trades publish at 4:10 pm. During this time, open orders may be cancelled by the dealer for symbols that are not in a “closing delayed” stock state.
4:10 PM – 4:15 PM	Post Market Cancel Session – During this session, open orders may be cancelled by the dealer.
4:15 PM – 5:00 PM	Extended Trading Session – Orders at the last sale price are accepted, but trades may only occur at the last sale price except when the last sale price is an invalid tick and for regulatory approval of a specialty price cross. If the last sale price is at invalid tick, a rounded equivalent of the last sale price, Rounded LSP, will be utilized instead. Day orders participate in this session. MBF session for option expiry takes place during Extended Trading once per month, the evening before an option expiry day.

TSX Alpha Exchange

TIME (ET)	Session
7:00 AM – 8:00 AM	Pre Open – New orders or CFO’s are not allowed, only cancels are permitted.
8:00 AM – 5:00 PM	Continuous Trading – At 8:00 am continuous trading commences. All regular order types are accepted.
5:00 PM – 5:30 PM	Post Market Cancel Session – During this session, open orders may be cancelled by the dealer.

2.2 Pre-Open

The TSX, TSX Venture and TSX Alpha markets support a pre-open session. During the TSX and TSX Venture pre-open session, market and limit priced orders, including Limit on Open (LOO) orders, can be entered but will not be executed until the market opens. Limit orders that were previously booked as GTC or GTD are available to be CFO'ed and/or cancelled during this session. Odd lot orders may be entered as well.

During the TSX Alpha pre-open session new orders or order amendments are not permitted. Orders resting in the TSX Alpha order book may be canceled.

2.2.1 Calculated Opening Price (COP)

The COP is calculated as follows. It is displayed and continuously updated during the entire Pre-Open session on the TSX and TSXV.

1. The COP is determined as the price where the most shares can trade.
2. If there is more than one price that satisfies the first criterion, then the COP is the price that leaves the least imbalance.
3. If there is more than one price that satisfies the second criterion, then the COP is the price that is closest to the previous trading day's Closing Price. (The TSX/TSXV closing price is used on TSX/TSXV markets).

The following orders participate in the COP calculation:

- Previously booked duration orders (GTC or GTD).
- Regular board lot sized market and limit orders received during the pre-open session; odd lots do not contribute to COP formation.
- LOO orders are treated the same as standard limit orders for the opening priority allocation.
- The entire board lot disclosed and undisclosed portions of iceberg orders are included in the COP calculation; however the remaining imbalance will not include the reserve volume of any icebergs.

Orders priced more aggressively than the current COP are displayed at the COP price instead of revealing their true limit price. Market priced orders are also displayed at the COP instead of revealing their unconditional market price.

Example: Calculated Opening Price

Assume at 9:00 a.m., the following orders exist in the system:

Previous Day's Close price: \$10.02

BID				OFFER			
Order # 001	A	1,000	10.00	MKT	200	79	Order # 002
Order # 003	B	200	9.99	9.99	500	79	Order # 004
Order # 005	C	200	9.99	10.00	100	80	Order # 006
				10.01	100	2	Order # 007

Possible Open Prices:

PRICE	Tradable Volume	Remaining Imbalance	Deviation from Prev. Day's Close Price
\$10.01	0	-	\$0.01
\$10.00	800	Bid of 200	\$0.02
\$.9.99	700	Bid of 700	\$0.02
\$9.98	0	-	\$0.04

The COP will be: \$10.00 since this price maximizes the tradable volume.

2.3 Opening

TSX Alpha

TSX Alpha supports a pre-open session where only cancels are permitted. Odd lots resting in the Odd lot book with a price equal to or more aggressive than the better of the opposite side of the Alpha BBO or the Protected NBBO will auto-execute at the better of these prices against the odd lot dealer prior to transitioning into the continuous trading session. The market transitions directly into continuous trading at 8:00 a.m. The first continuous trade of the day is subject to price volatility parameters based on the listing market's (i.e. TSX / TSXV) previous day closing price.

TSX and TSXV

TSX and TSXV support a Market on Open (MOO), which is a visible single price opening call market at 9:30 a.m. All orders, with the exception of Limit on Open orders, not filled during the opening are subsequently booked in the continuous market at their limit price and are then eligible to trade throughout the day in the continuous market. Unexecuted LOO orders will be cancelled after the opening auction, before the commencement of the continuous trading session.

Must Be Filled orders (TSX only) will be filled as part of the opening.

Registered Market Makers (TSX) and odd lot dealers (TSXV) will auto-execute marketable odd lots at the NBBO at the end of the opening.

2.3.1 Opening Allocation

At the opening call, matching of orders is performed sequentially at the COP (Note each starts with orders from the imbalance side using the total volume of guaranteed fill¹ orders and then limit orders priced at the COP, allocated to orders from the non-imbalance side)

1. Trade with the disclosed volume of offsetting Guaranteed Fill orders entered by the same PO, provided that neither order is an unattributed or jitney order; then
2. Trade with the disclosed volume of offsetting Guaranteed Fill orders, then
3. Trade with the disclosed volume of offsetting limit orders priced at the COP entered by the same PO, according to time priority, provided that neither order is an unattributed or jitney order; then
4. Trade with the disclosed volume of offsetting limit orders priced at the COP according to price/time priority; then
5. Trade with the undisclosed volume of offsetting Guaranteed Fill orders, according to time priority; then
6. Trade with the undisclosed volume of offsetting limit orders priced at the COP according to time priority.

1. The following orders are guaranteed a complete fill at the Calculated Opening Price (COP): MBF, MKT and Better Price Limit orders (those priced better than the COP). Undisclosed order volume of Iceberg orders that meet these criteria are not guaranteed a fill if the order is on the side that has the imbalance.

When trades are executed in the Opening Auction, the COP sets the last sale price. If there are no trades at the Opening, the close price from the previous trading day sets the open price.

If the round lot portion of a mixed lot order is fully filled in the Opening Auction, the odd lot portion of the order is auto-executed at the opposite side of the Protected NBBO immediately following the Opening Auction. If the Protected NBBO is locked or crossed, odd lot matched is suspended until the Protected NBBO is no longer locked or crossed.

Undisclosed portions of iceberg orders have the same priority as disclosed portions. If during the opening allocation, the displayed portion of an iceberg order partially trades, its remaining displayed volume retains priority after the opening.

There is no distinction between Active or Passive orders during the Opening Allocation. Please refer to the TSX Markets Fee Schedule posted on the TMX website for more information on opening fees.

On the TSX, Must Be Filled (MBF) orders for option expiry are treated the same as any other regular market priced order in the opening and the MBF marker is not publicized on any of these orders.

Example: Opening Allocation

Assume at 9:30 a.m., the following orders exist in the system:

COP: \$10.00

BID				OFFER			
Time	Broker	Quantity	Price	Price	Quantity	Broker	Time
Order # 001	A	1,000	10.00	MKT	200	79	Order # 002
Order # 003	B	200	9.99	9.99	500	79	Order # 004
Order # 005	C	200	9.99	10.00	100	80	Order # 006
				10.01	100	2	Order # 007

The following trades are allocated in the following order:

TRADE	Buy Order #	Sell Order #	Volume	Price
#1	001	002	200	\$10.00
#2	001	004	500	\$10.00
#3	001	006	100	\$10.00

Resulting order book:

BID			OFFER		
Order # 001	200	10.00	10.01	100	Order # 007
Order # 003	200	9.99			
Order # 005	200	9.99			

2.3.2 Guaranteed Orders

On TSX and TSXV, aggressively priced displayed limit orders that are better than the COP and displayed market priced orders are both guaranteed to trade fully in the opening. Non-displayed portions of these orders will contribute to COP formation but the non-displayed portions are not guaranteed. A guarantee means that the security will not open unless the guaranteed portions of these orders are completely filled. In the event that the guaranteed portions of orders are not filled the security will move into a Delayed Open state.

2.3.3 Delayed Opening

The opening occurs automatically at 9:30 a.m. unless otherwise delayed due to either:

1. A systematic delay due to a price movement relative to the previous day's closing price beyond acceptable system parameters configured by TMX staff. If the symbol is an ETF, then the systematic delay is due to a price movement relative to the midpoint of the protected NBBO just before the previous day's close. Most opening delays are systematic due to price movements, and typically cleared within a few minutes.
2. A manual delay initiated by TMX staff where more time is needed to validate an appropriate opening price. TMX staff will open the market manually (re-scheduled or immediately) once the opening price has been validated.
3. An automatic delay due to an unfilled imbalance of guaranteed orders. In the case of an automatic delay the market is opened manually (re-scheduled or immediately) by TMX staff once the imbalance of guaranteed orders has been resolved. (Either more liquidity is provided to offset the guaranteed portions of orders or the guaranteed orders themselves are either removed or price adjusted.)

Special openings in unusual circumstances can be delayed longer and scheduled by TMX staff to open at a specific time to coincide with other external events.

During an opening-delay orders can still be entered and/or cancelled until the opening takes place. A rescheduled opening can be cancelled and either further delayed or opened immediately.

2.4 Continuous Trading

TSX/TSXV

TSX and TSX Venture operate a real-time, continuous auction market that matches individual orders with continual price discovery from 9:30 AM to 4:00 PM in the central limit order book (CLOB). This period is referred to as the Regular Session. All regular order types are accepted during this session.

During the regular session, orders are individually displayed in the CLOB. Displayed portions of CLOB orders are given trading priority based on Price/Broker/Long Life/Time priority. Broker priority does not apply if either side has marked their order Anonymous or Jitney. For more information, see the Broker Preferencing section.

At a given price, orders will be processed in the following sequence:

1. Broker Preference amongst displayed portions of Long Life orders (in time priority if multiple matches exist).
2. Broker Preference amongst displayed portions of non-Long Life orders (in time priority if multiple matches exist).
3. Displayed portions of all other Long Life orders (in time priority if multiple matches exist).
4. Displayed portions of all other non-Long Life orders (in time priority if multiple matches exist).
5. At this step, if the incoming order was marked 'bypass' the undisclosed portions of icebergs are replenished and there is no further matching.
6. Undisclosed portions of Long Life icebergs (in time priority if multiple matches. There is no broker preferencing amongst undisclosed portions of icebergs).
7. Undisclosed portions of non-Long Life icebergs (in time priority if multiple matches. There is no broker preferencing amongst undisclosed portions of icebergs).
8. Broker preference amongst dark volume in time priority.

9. Dark order volume in time priority.
10. Any remaining portion of the incoming order is then booked or cancelled (depending on the trader's "duration" instructions).

TSX Alpha

Alpha also operates a real-time, continuous auction market that matches individual orders with continual price discovery from 8:00 AM to 4:00 PM in the central limit order book (CLOB). This period is referred to as the Regular Session. All regular order types are accepted during this session.

During the regular session on TSX Alpha, the same Price/Broker/Time priority exists as on TSX/TSXV, with the exception of interactions with dark orders.

At a given price, orders will be processed in the following sequence:

1. Broker Preference amongst displayed portions (in time priority if multiple matches exist).
2. Displayed portions of all other orders (in time priority if multiple matches exist).
3. At this step, if the incoming order was marked 'bypass' the undisclosed portions of icebergs are replenished and there is no further matching.
4. Undisclosed portions of icebergs (in time priority if multiple matches exist. There is no broker preferencing amongst undisclosed portions of icebergs).

Example: Matching Priority on TSX / TSXV / TSX Alpha during Continuous Trading

Assume the CLOB is as follows: (ordered in time priority)

Last Sale Price: \$10.00

BID				OFFER			
Broker	Total Qty.	Visible Qty	Price	Price	Visible Qty.	Total Qty.	Broker
A		1,000	9.99	10.01	200		A
B		200	9.99	10.01	500		B
C	10,000	100	9.99				
D		100	9.99				

An incoming order is received from Broker B to Sell 5,000 @ Market.

The following trades take place in the following order:

BUYER	Seller	Volume	Price	Comments
B	B	200	9.99	Given same price level, seeks same-broker order first.
A	B	1,000	9.99	Given same price level, and no same-broker orders remain, will prioritize by time.
C	B	100	9.99	
D	B	100	9.99	
C	B	3,600	9.99	Iceberg volume reloads to fill the entire remaining quantity of the active order.

Resulting order book:

BID				OFFER			
Broker	Hidden Qty.	Quantity	Price	Price	Quantity	Hidden Qty.	Broker
C	6,300	100	9.99	10.01	200		A
				10.01	500		B

Cross Interference on TSX and TSXV

During continuous trading an attributed cross will seek to match previously booked attributed orders from the same PO at the cross price. The side of the cross that remains unfilled (because it gives up this volume) is then killed immediately. Regular crosses are subject to this “cross interference” and only allowed at or inside the best bid/ask but some specialty crosses are exempt from these rules. See the Crosses section for more detail.

Cross Interference on TSX Alpha

During continuous trading attributed or unattributed crosses will not be subject to interference from orders in the TSX Alpha CLOB.

2.5 Odd Lot trading

TSX/TSXV

Orders with volume less than a standard trading unit are considered odd lot and do not trade in the regular CLOB. The majority of listed securities are assigned an RT on TSX and an odd lot dealer on TSXV. The RT/odd lot dealer automatically guarantees a complete fill at the Protected NBBO for incoming odd lot orders priced at or better than the opposite Protected NBBO. If the odd lot order’s price is not marketable the odd lot order is displayed in the odd lot book and will trade at the Protected NBBO with the RT/odd lot dealer once its price becomes better than or equal to the opposite side Protected NBBO. If an opposite side odd lot order is entered with the exact same volume and priced at or better than a resting odd lot order’s price, then the odd lots can trade against each other. For stocks with no RT/odd lot dealer, odd lots can only trade against each other in the manner described above. In all cases, odd lot matching only occurs within the context of the protected NBBO. Odd lots only trade as “All or None” which means partial fills are not accepted. It is possible for the odd lot book to display orders with overlapping prices when resting odd lot orders can match on price but not on volume.

TSX Alpha

Orders with volume less than a standard trading unit are considered odd lot and do not trade in the regular CLOB. The majority of TSX Alpha traded securities are assigned an odd lot dealer. The odd lot dealer automatically guarantees a complete fill at the better of the Protected NBBO and the Alpha best bid or offer for incoming Odd Lot orders priced at or better than the opposite side’s price. If the odd lot order’s price is not marketable the odd lot order is displayed in the odd lot book and will trade at its limit price with the odd lot dealer once its price becomes better than or equal to the opposite side of the better of the Protected NBBO and the Alpha best bid or offer. If an opposite side odd lot order is entered with the exact same volume and priced at or better than a resting odd lot order’s price, then the odd lots can trade against each other. For symbols with no odd lot dealer, odd lots can only trade against each other in the manner described above. In all cases, odd lot matching only occurs within the context of the Protected NBBO plus the Alpha BBO. Odd lots only trade as “All or None” which means partial fills are not accepted. It is possible for the odd lot book to display orders with overlapping prices when resting odd lot orders can match on price but not on volume.

2.6 Market on Close (MOC)

The Market on Close (MOC) facility is an electronic call market that establishes the closing price for eligible listed stocks on Toronto Stock Exchange and TSX Venture Exchange. The MOC facility is a value added service for Toronto Stock Exchange (TSX) / TSX Venture Exchange (TSXV) providing equal access and opportunity in setting the closing price, increased price discovery efficiency, and reducing the volatility of the closing price for symbols eligible for the MOC facility.

The facility provides a fair benchmark for the fund management industry and provides a mechanism to minimize tracking error caused by deviations from the closing price. Derivative traders also benefit from the MOC facility as they require reliable benchmark closing prices for index related securities for basis, swaps, and options trades.

The MOC facility was introduced to TSX in 2004 and has since been widely adopted as an efficient and effective mechanism to establish the closing price. The facility was further extended to TSXV in 2012 to aid in portfolio and index rebalancing activities for recent Venture indices and index tracking ETFs. As of Oct 18, 2021, the facility has been modernized to improve transparency, better align with global markets and improve consistency of execution. For details on the new MOC model, please refer to the TSX MOC Detailed Guide.

Initially the MOC facility was introduced on TSX for the constituents of the S&P/TSX Composite Index. With the increase in the number of indices and the increase in the number of ETFs, there has been steady growth in the symbols added to the MOC facility.

Currently TSX and TSX Venture support a MOC session, available for specified securities. TSX Alpha does not support a MOC session.

2.6.1 MOC-Eligible Securities

All TSX listed equities are eligible for the TSX MOC Facility, with the exception of ETFs, preferreds, rights, warrants, notes, debentures, sustainable bonds and exchangeables. The TSXV MOC facility includes constituents of industry recognized indices as well as certain symbols that are MOC eligible based on participant demand and feedback.

2.6.2 Participating in MOC

The MOC book is independent and runs in parallel with the CLOB. Orders in the MOC book are not disseminated publicly. MOC trades occur as a result of interaction between the four following types of orders:

- 1. MOC orders:** are priced at “market” and only execute at the MOC calculated closing price. MOC orders are entered into the MOC book during Post Open and Imbalance period (7:00 am - 3:56 pm²) and are queued in time priority. MOC orders cannot be cancelled after the imbalance is published at 3:50 pm and may be board lot, mixed lot or odd lot sized orders with regular settlement terms. Odd lot MOC orders are executed only if there is a board lot MOC fill first. MOC orders may be marked short, for jitney purposes, and/or anonymous.
- 2. Limit on Close (LOC) orders:** are limit orders that only trade at the calculated closing price. LOC orders may be board lot, mixed lot or odd lot sized orders. LOC orders are accepted up to the close on either side of the order book without restrictions on their limit price.

LOC orders received during the Freeze Period (3:46 pm² – 4:00 pm) are designated as “Pegged LOC” orders. Pegged LOC orders are “pegged” to the MOC Reference Price such that the price is re-priced to the MOC Reference Price if it is more aggressive (buy orders with a price greater than the Reference Price, and sell orders with a price lower than the Reference Price). For Pegged LOC orders less aggressive than the Reference Price, the limit price remains as entered and there is no difference from a normal LOC order.

Cancelling and modifying LOC orders

Post Open (9:00 am – 3:50 pm): LOC orders may be cancelled or modified.

MOC Imbalance (3:50 pm – 3:56 pm²): No LOC order cancels permitted. Modifications to LOC order price only permitted to more aggressive price.

MOC Freeze (3:56 pm² – 4:00 pm): No LOC order cancels or modifications permitted.

PME (4:00 pm - 4:10 pm): MOC market and MOC limit orders entered before 4 pm cannot be cancelled or modified; Post imbalance LOC orders may be cancelled or modified.

2. Note that the MOC Freeze period starts at a random time between 3:56pm – 3:57pm, which is the end of the Imbalance period.

3. **CLOB orders:** Regular limit orders and non-pegged dark orders that have been placed in the central limit order book and remain open in the book at 4:00 pm are eligible to be drawn into the MOC facility in order to satisfy the MOC imbalance. Note that LOC orders and CLOB orders compete equally to satisfy the MOC imbalance. Non-displayed portions of CLOB orders (icebergs) are allocated after other visible CLOB or LOC orders at the same price, but before dark orders.

2.6.3 MOC Imbalance Determination

MOC orders and LOC orders that are priced equal to or more aggressive than the reference price at the time of the calculation are considered when determining the MOC imbalance. The reference price for the imbalance calculation that is published every 10 seconds between 3:50 pm – 4:00 pm is the TSX or TSXV Best Bid and Offer mid-point. The reference price for the 4:00 pm imbalance calculation (if necessary) is the TSX or TSXV last sale price. The imbalance side and size are determined as the difference between the aggregate eligible buy MOC/LOC volume and aggregate eligible sell MOC/LOC volume.

2.6.4 MOC Imbalance

At the start of the Imbalance period (3:50 pm), MOC imbalance messages are disseminated through the feeds to be sent every 10 seconds identifying:

- Symbol
- Reference Price
- Imbalance Side
- Imbalance Volume
- Paired Volume
- Market Order Imbalance Volume
- Market Order Imbalance Side
- Near Indicative Closing Price
- Far Indicative Closing Price
- Price Variation

This notification provides an opportunity to offset the imbalance using MOC orders between 3:50 pm and 3:56 pm, and LOC orders between 3:50 pm and 4:00 pm.

At 4:00 pm, where a PME is necessary, the PME MOC imbalance message is published once to let traders know that TMX will be accepting offsetting orders between 4:00 and 4:10 pm. The fields sent in the PME MOC imbalance message are:

- Symbol
- Reference Price
- Imbalance Side
- Imbalance Volume

2.6.5 Calculated Closing Price

At 4:00 p.m., the calculated closing price (“CCP”) is determined by combining the orders in the MOC Book with those in the central limit order book. The CCP is validated against the PME range. The PME range is defined as the greater of either (i) five trading increments or (ii) the PME percentage parameter, from both the VWAP of the last 20 minutes of regular market trading and the last board-lot sale price from the continuous market. If the CCP does not violate the PME range then the symbol will close at the CCP and trades will be published, otherwise a price movement extension (PME) period between 4:00 pm and 4:10 pm will be initiated for that symbol.

MOC will fill all MOC orders against other offsetting MOC orders and offsetting LOC orders and offsetting CLOB orders up to a maximum price volatility percentage. This metric is known as the Closing Price Acceptance (CPA) parameter.

2.6.6 Price Movement Extension

The PME period is designed to solicit further liquidity to offset a remaining imbalance. During the PME (4:00 pm - 4:10 pm), limit orders, on the contra-side of the imbalance may be entered into the MOC book; such orders are not displayed. At 4:10 pm the CCP is recalculated and validated against the closing price acceptance (“CPA”) parameters, which is a price control parameter that is used to either accept or reject the CCP that is derived from the PME. If there is a violation of the CPA parameter, the symbol will close at the price that matches the most volume, leaving the least imbalance within the CPA range.

2.6.7 Closing Call Allocation

The closing call allocation is the priority in which MOC Orders and orders residing in the central limit order book are matched at the closing price.

Orders will be executed in the Closing Call based on the following allocation:

1. MOC Market Orders shall trade with offsetting MOC Market Orders entered by the same PO, according to time priority, provided that neither order is an unattributed or jitney order; then
2. MOC Market Orders shall trade with offsetting MOC Market Orders, according to time priority; then
3. MOC Market Orders shall trade with the offsetting limit orders (LOC, Pegged LOC, DRK, or disclosed volume of continuous visible orders) entered by the same PO, according to price/time priority, provided that neither order is an unattributed or jitney order; then
4. MOC Market Orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or CLOB) according to price/time priority; then
5. LOC / Pegged LOC / disclosed volume of continuous limit orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or disclosed volume of continuous lit orders) entered by the same PO, according to price/time priority, provided that neither order is an unattributed or jitney order; then
6. LOC / Pegged LOC / disclosed volume of continuous limit orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or CLOB orders) according to price/time priority; then
7. Undisclosed volume of continuous limit orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or CLOB orders) according to price/time priority; then
8. DRK limit orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or disclosed volume of continuous lit orders) entered by the same PO, according to price/time priority, provided that neither order is an unattributed or jitney order; then
9. DRK limit orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or CLOB orders) according to price/time priority; then
10. Passive Pegged LOC** orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or disclosed volume of continuous lit orders) entered by the same PO, according to price/time priority, provided that neither order is an unattributed or jitney order; then
11. Passive Pegged LOC** orders shall trade with offsetting limit orders (LOC, Pegged LOC, DRK, or CLOB orders) according to price/time priority.

2.6.8 MOC Volatility Parameters

The following parameters are in place to manage price volatility:

MARKET & PRODUCT	PME %	CPA
TSX	3% or five trading increments	10%
TSX Venture	5% or five trading increments	15%

2.7 Post Market Cancel Session

The Post Market Cancel Session is supported on TSX, TSXV and TSX Alpha. It provides a five minute window after the continuous trading session closes from 4:10 p.m. – 4:15 p.m. on TSX/TSXV for trading participants to cancel any open orders that they do not wish to participate in Extended Hours Trading. TSX Alpha supports a Post Market Cancellation session from 5:00 p.m. – 5:30 p.m.

** At the time of closing, if the MOC reference price is less aggressive than the closing price (and the closing price is within the order limit price), Pegged LOC orders are repriced to the closing price to participate in the closing auction. Such orders are referred to as "Passive Pegged LOC" orders and are last in priority for allocation.

2.8 Extended Trading Session

The Extended Trading Session also referred to as the “Special Trading Session” or “Last Sale Trading” operates from 4:15 p.m. – 5:00 p.m. on TSX and TSX Venture.

TSX and TSX Venture

During the Extended Trading Session, odd lots, board lots and crosses can trade at the official last sale price determined by MOC or if no MOC, by the last independent trade (“Last Sale Price” or “LSP”) from the CLOB session. If the LSP is at an invalid tick, a rounded equivalent of the LSP can be used (“Rounded LSP”). If the LSP is at a half tick, the Rounded LSP will be the LSP rounded up to the nearest valid tick. For example, if the LSP is \$5.815, the Rounded LSP is \$5.82. Orders priced at or better than the Last Sale Price are carried forward from CLOB (but not from MOC) and where those order prices are better than the LSP those orders are re-priced to the LSP and are eligible to trade in the Special Trading Session at the LSP or Rounded LSP. On-stop orders are also eligible to trade in the Special Trading Session if the on-stop order is triggered as a result of an MOC changing the LSP.

2.9 Must Be Filled (MBF) Session for Option Expiry

The Must Be Filled session is supported on the TSX only and is provided for entering MBF orders to offset expiring derivatives positions. The MBF session takes place once per month on the Thursday immediately before the option expiry day. Option expiry day always occurs on the third Friday of every month. The MBF order entry session occurs during the Extended Session (4:15 p.m. – 5:00 p.m.) and the resulting trades occur in the next day’s (Friday’s) opening.

The net MBF imbalance for each security is made public before the pre-open session on expiry day. This publicity ensures that market participants have a chance to respond with enough liquidity to satisfy the MBF orders. Imbalances less than 5,000 shares are not publicized. A buy imbalance means there are excess MBF buy orders and a sell imbalance means there are excess MBF sell orders.

On the expiry day (Friday morning) all the MBF orders that were entered the previous day are treated like pre-open market orders and are thus guaranteed a fill at the COP. The MBF orders are visible to market participants but the MBF condition on those orders is not public. Trading participants can enter, change or cancel MBF Orders during the MBF session (the day before expiry) but cannot enter, change or cancel an MBF order on the expiry day. MBF orders must be in board lot multiples.

Example: MBF Orders

A trader must enter an MBF order when that trader has written an uncovered call to buy 5,000 of ABC @ \$10.00 that will be exercised because ABC is currently trading at \$12 (i.e. the call is in the money). The trader who wrote the call has an obligation to deliver the stock at \$10 when it is exercised upon expiry and since the call was not covered the trader who wrote the call must buy the stock to be in possession of the underlying security (5,000 shares of ABC) upon expiry. To ensure possession of the stock the call writer must enter an MBF order to purchase 5,000 ABC @ Market. That order will then trade at the market opening on expiry day.

Section 3 Products & Order Features

3.1 TSX DRK

TSX DRK is a dark pool with deep liquidity and rich functionality, offering fully hidden orders and features on TSX and TSXV-listed securities, and is uniquely integrated with the TSX and TSXV displayed order books, Canada's deepest pool of visible liquidity.

TSX DRK offers a variety of unique features to accommodate a wide range of dark strategies, including more efficient dark active sweeping strategies to help facilitate best execution at reduced costs, and mechanisms to control the environment under which a trade is executed to help minimize information leakage.

- Posting orders on TSX DRK facilitates continuous access to both orders expressly seeking dark price-improving liquidity and orders otherwise seeking interaction with Canada's deepest displayed order book, providing increased fill opportunities.
- Liquidity takers can find significant value through meaningful price improvement and reduced trading costs.

All TSX DRK functionality is available on both TSX and TSX Venture listed symbols.

3.1.1 TSX DRK Trading on TSX and TSXV

TSX DRK currently offers dark limit and pegged order types, Seek Dark Liquidity® (SDL®) orders that specifically target dark liquidity, and a Contra Midpoint Only+ (CMO+) facility to allow trading between like-minded investors. This dark functionality is integrated with the displayed order book and can be entered using standard FIX tags applicable to the TSX-FIX order entry protocol.

- **DRK Midpoint Peg orders** will peg to the Protected NBBO midpoint. They will always provide meaningful price improvement of at least a full trading increment unless the Protected NBBO spread is one trading increment. In this case the price improvement provided will be half a trading increment.
- **DRK Primary Peg orders** will peg to the same-side Protected NBBO, and can be entered with an optional aggressive or passive offset.
- **DRK Market Peg orders** will peg to the opposite-side Protected NBBO, but will default to one-tick inside the opposite-side Protected NBBO. Offsets on DRK Market Pegs will be accepted, but can only be passive offsets.
- **DRK MPI (Minimum Price Improvement) Peg orders** will provide the minimum required price improvement except where the Protected NBBO spread is two-ticks or less, in which case the order will peg to the same side Protected NBBO. No offsets are permitted on DRK MPI Peg orders.
- **DRK limit orders** will provide meaningful price improvement to small orders however large orders will be eligible to trade against a DRK limit order at the Protected NBBO on TSX/TSXV once all visible volume on TSX/TSXV has been exhausted.
- **Contra Midpoint Only Plus (CMO+) orders** will peg to the Protected NBBO midpoint, and are subject to a randomized 400 to 600 millisecond delay upon entry. CMO+ orders will only execute against other CMO+ orders, with the exception of an optional feature to allow CMO+ orders, on entry, to execute actively against all resting midpoint-eligible dark liquidity.
- **Seek Dark Liquidity (SDL)** is a feature available for use only with orders marked as IOC or FOK. It is intended to be used where seeking to execute a dark only liquidity taking strategy, including where seeking solely to obtain price improvement for a client order. SDL is well suited for use as a dark probe by a smart order router to systematically access low cost, price improving dark liquidity before routing to the available visible book. Users of SDL will have the option of restricting their dark executions to prices that provide price improvement, or can allow for executions against dark resting liquidity at-the-quote, subject to their stated limit price as well as regulatory requirements applicable to at-the-quote dark trading.

Active pegged orders and SDL orders will not interact with visible passive orders. Only DRK limit orders, with the exception of an active DRK limit order with a MIS condition, can interact with passive displayed orders. When executing against both dark and displayed resting orders, these DRK limit orders will execute through an allocation sequence according to price-visibility-broker-Long Life-time priority, ensuring the priority of displayed orders over dark orders.

Pre-trade Transparency

There is no pre-trade transparency of DRK orders meaning order responses and changes in order attributes are not disseminated publicly. As DRK orders are fully hidden they do not contribute to the symbol's quote. All order responses are fully encrypted in the Broadcast feed.

Post-trade Transparency

There is full post-trade transparency of DRK execution prices which will update the last sale price and be provided to the TMX information processor's Consolidated Last Sale (CLS) feed. All DRK tag details, with the exception of the IsDark and IsMidOnly tags, are classified as private content and therefore fully encrypted. The IsMidOnly tag will identify all CMO+ to CMO+ trades on the public market-data feeds, allowing for executions within the CMO+ facility to be clearly distinguished. This does not apply to CMO+ orders that trade on entry against resting non-CMO+ dark liquidity. The IsDark tag will enhance transparency of dark trading on TSX and TSXV by identifying all trades where the passive side of the trade is dark.

Eligible Symbols for DRK Orders

TSX/TSXV securities that are enabled to accept DRK orders are identified based on information communicated by TSX/TSXV through notices to Participants/Members, as well as designations on a daily basis within the symbol status message distributed on TMX market data feeds. If technical issues arise such that a symbol is unable to accept DRK orders, any change to that symbol's eligibility will be communicated to all participants through a stock status message which will have the Accept Undisplayed tag set to "N". Once the issue has been addressed, that symbol may have its eligibility reinstated. When this occurs a stock status message will be disseminated with the Accept Undisplayed tag set to "Y". These events will be followed by external notification by TSX/TSXV Trading Support serving as further notification of the event.

Minimum Quantity and Minimum Interaction Size

DRK orders may be submitted with an optional Minimum Quantity (MinQty) or Minimum Interaction Size (MIS) instruction that specifies minimum volume parameters that must be met for the order to trade. MinQty and MIS are available for use with all DRK order types, specifically pegs, DRK limit orders, SDL orders, and CMO+ orders.

Minimum Quantity – MinQty is an optional instruction that will prevent an order from trading unless the total tradable volume meets or exceeds the volume specified in the MinQty instruction.

Minimum Interaction Size – MIS is an optional instruction that specifies the minimum size that any single contra-side order must be in order to be eligible to trade against the 'MIS order'.

For more information on MinQty and MIS, see the TSX DRK Liquidity Guide.

Post Only DRK Orders

The Post Only order feature is available on all DRK limit, DRK pegged, and CMO+ orders with a limit price. A DRK Post Only order will reject immediately on entry if any part of the order is immediately executable with a visible order during continuous trading. If on entry the DRK Post Only order is immediately executable with a contra-side dark order, the DRK Post Only order will book at its limit price or pegged value as applicable, and subject to any other pricing constraints to avoid locking/crossing the Protected NBB0.

As indicated by the above, two contra-side Post Only DRK orders that are eligible to match based on price will not execute. Instead, both will maintain their price until executing against an active order. In addition, no execution will take place between a resting DRK limit order and an incoming contra-order marked Post Only with the same price as the resting order. Instead, both orders will sit in the book at the locked price and will not execute against each other unless the first resting DRK limit order is CFO'd by the trader and becomes a new order in accordance with existing TSX CFO handling procedures.

In the scenario where the first DRK resting order referred to above is instead a non-Post Only pegged order, it will only execute actively when a Protected NBB0 repricing causes it to become more aggressively priced.

3.2 Cancel on Disconnect

Cancel on Disconnect (COD) is an optional gateway session feature that will restrict order entry on user-specified session bundles and attempt to cancel all open orders per session upon an involuntary loss of connectivity between TMX and the client. Cancel on Disconnect will assist users to mitigate risks associated with managing open orders on all TMX markets when there is an involuntary loss of connectivity.

Once COD is triggered, the session bundle will be blocked, new orders entered on that order entry port will not be accepted and order acknowledgments will not be sent. All open orders pertaining to the triggered session bundle will be cancelled, with the exception of duration orders (i.e. GTC/GTD), MOC orders and LOC orders and cancellation that is prevented due to the stock/stock group state (e.g. stock state is inhibited). The session bundle will be automatically unblocked after a brief period of time to allow for reconnection.

Availability of COD:

SESSION	Availability
Pre-open	Yes
Continuous Trading	Yes
Post Market Cancel Session	Yes
Extended Trading	Yes

COD functionality is available for all gateway sessions connecting to Toronto Stock Exchange, TSX Venture Exchange and TSX Alpha. Order cancellation confirmation messages as result of COD will be designated by a TSX FIX tag.

To enable the Cancel on Disconnect feature, the COD Application Form must be completed and submitted to a TMX Account Manager by a TSX Participating Organization, TSXV Member, or TSX Alpha Member, including for DMA client sessions through which access to TSX, TSXV, or TSX Alpha is provided.

3.2.1 Configuration Levels

Clients can specify one of the following levels of COD service for each enabled session:

- Level 1** If a session is enabled for Level 1 COD, then COD will be triggered if there is no activity in the session for two consecutive heartbeat periods.
- Level 2** If a session is enabled for Level 2 COD, then COD will be triggered if there is no activity in the session for two consecutive heartbeat periods or if the session gets disconnected from the client side without TMX receiving any log-out or sign-off request from the client (i.e. abnormal/socket disconnect).
- Level 3** If a session is enabled for Level 3 COD, then COD will be triggered if there is no activity in the session for two consecutive heartbeat periods or if the session gets disconnected from the client side without TMX receiving any logout or sign-off requests from the client or if the client is gracefully disconnected after TMX receives the log-out/sign-off request from the client.

For all three levels of service, if an order is cancelled due to a COD trigger, order cancellation confirmation messages with a COD indicator will be sent once reconnection on the associated sessions is established.

3.3 Order Protection Rule (OPR) Features

The following features are supported by TMX to comply with the NI 21-101 Order Protection Rule obligation.

3.3.1 Directed Action Order (DAO)

The private DAO marker is an implicit or explicit order instruction as defined in NI 23-101. Orders are assumed to be DAO orders provided directly to the marketplace from a participating organizations system, or if the explicit DAO marker is provided. DAO orders trade or book without any attempt to protect better-priced protected orders on away markets. The responsibility to prevent trade throughs for orders considered DAO is assumed by the participating organization.

3.3.2 Order Protection by Re-price

On TSX, TSXV and TSX Alpha, orders designated as “OPR re-price” will prevent OPR violations by only allowing trades at or better than the best price on away protected marketplaces before adjusting the remainder to the most aggressive price level allowed based on the away protected best price.

3.3.3 Order Protection by Cancel

On TSX, TSXV and TSX Alpha, orders designated as “OPR cancel” will prevent OPR violations by only allowing trading at or better than the best price on away protected marketplaces before cancelling back the remainder to prevent trading or quoting at price levels prevented by the away protected best price.

3.4 Post Only

The Post Only order feature helps liquidity providers tighten the bid/ask spread by rejecting an order upon entry when it is otherwise immediately executable. This feature is intended for orders without immediacy where the trader’s strategy depends on the order displaying as CLOB-posted liquidity without removing CLOB-posted liquidity. For more information, please see the Post Only Product Sheet. Please refer to section 3.3.1 for information on Post only when used on Dark orders.

Post Only is available on TSX, TSXV and TSX Alpha. It is an optional designation available for visible and dark orders and does not apply to orders in the opening or MOC sessions. A post only order is rejected if the order is fully or partially tradable against resting visible liquidity. When post only is applied to a mixed lot order, it only rejects the entire order based on whether the board lot portion is immediately tradable, regardless of the tradable status of the odd lot portion.

Post Only instructions on TSX Alpha are accepted on new orders, order amendments and cancels. An incoming message with the post only instruction must have a volume equal to or exceeding the minimum post only volume requirement for that symbol, otherwise the message is rejected. Each symbol trading on TSX Alpha has a minimum post only volume assigned that will be reviewed and updated each month, and communicated through the start of day symbol status messages. Minimum post only volumes are also available on the TMX website (<http://www.tsx.com/resource/en/1177/alpha-minimum-posting-size.csv>). Participants should rely at all times on the minimum post only volumes contained in the start of day symbol status messages as the most current, as the posted .csv file may not always reflect changes made intra-month (e.g., as a result of splits, consolidations, and new listings). Messages containing the post only instruction are not subject to TSX Alpha’s order processing delay (described in section 4.14.1).

All durations including GTC, GTD are accepted, and the order must always contain a limit price. The Post Only flag may be CFO’ed to remove the flag after entry.

Example: Post Only Feature

Assume the CLOB is as follows:

BID			OFFER		
Order # 001	100	10.00	10.02 (Dark)	400	Order # 002
			10.02	100	Order # 003
			10.03	200	Order # 004

If an incoming Post Only order to buy 300 shares @ 10.02 is entered, then it will be rejected because it is entirely executable.

If an incoming Post Only order to buy 1,000 shares @ 10.02 is entered, then it will be rejected because it is partially executable.

If an incoming Post Only order to buy 1000 shares @ 10.01 is entered, then it will book (see order 005) and the resulting CLOB will be:

BID			OFFER		
Order # 005	1,000	10.01	10.02 (Dark)	400	Order # 002
Order # 001	100	10.00	10.02	100	Order # 003
			10.03	200	Order # 004

3.5 Drop Copy

Drop Copy is a risk management tool designed to facilitate real-time monitoring of trading activity on all three TMX equity marketplaces. It allows trading participants to define a secondary destination through an additional session connection for copies of all trades and cancelled trades (if any) for each order entry session. Order messages are not included on Drop Copy sessions.

Setting up a Drop Copy is facilitated by Trading Services, with safeguards in place to ensure only authorized persons can request a drop copy and private trading information is kept confidential.

3.6 Self-Trade Prevention

TMX offers four types of solutions to assist trading participants in managing accidental trades with themselves (wash trades) and are available on all TMX marketplaces (TSX, TSXV, TSX Alpha).

3.6.1 Self-Trade Prevention

Self-trade prevention is an optional order feature that prevents two orders from the same broker from executing against each other based on unique trading keys defined by the broker. These features provide more opportunities for individuals to participate on both sides of the market without unintentionally violating 'wash trading' rules described in UMIR 2.2. Rules permit individuals to place buy and sell orders on a market for a given stock at the same price so long as that individual only trades with others and does not cross his own orders. Preventing self-trading ensures there is no misleading appearance of additional trading in a stock.

Cancel Newest Self-Trade Prevention

An optional feature that prevents two orders from the same broker from executing against each other based on unique trading keys defined by the broker. An active order is rejected instead of trading against a resting order from the same broker with the same unique trading key. Mixed lot and odd lot volumes are allowed but the self-trade prevention is applied only to the board lot portion of the order.

Cancel Oldest Self-Trade Prevention

The Cancel Oldest self-trade prevention instruction prevents an incoming order from executing against a passive order from the same broker with a self-trade prevention instruction and matching self-trade keys. The passive order is cancelled and the active order trades up or down to its limit, booking any remaining volume if eligible. Please note that the cancel oldest self-trade prevention feature is not permitted with the long life order attribute. Mixed lot and odd lot volumes are allowed but the self-trade prevention is applied only to the board lot portion of the order.

Decrement Largest and Cancel Smallest Self-Trade Prevention

The Decrement Largest and Cancel Smallest self-trade prevention instruction prevents an incoming order from executing against a passive order from the same broker with a self-trade prevention instruction and matching self-trade keys. If both orders are equivalent size, both orders are cancelled. If orders are not equivalent in size, the smaller order is cancelled and the larger order is decremented by the size of the smaller order. If the larger order is passive, its remaining volume continues to rest in the book; if the larger order is active, the balance of the order trades up or down to its limit, booking any remaining volume if eligible.

Please note that the decrement largest and cancel smallest self-trade prevention feature is not permitted with the long life order attribute, or with mixed lot or odd lot volumes.

Additional Details

Self-trade prevention is applied during Continuous Trading session only, and keys are ignored during Market on Open allocation and Market on Close.

Keys may be alpha-numeric (any combination of letters and numbers). It does not impact a broker if another broker uses the same key.

If two orders from the same broker with the same key are matched, but both orders have different self-trade prevention instructions, then the instruction on the active order is used.

Example Scenario with Cancel Newest Self-Trade Prevention

When a tradable order is received, the TMX performs a check: If the same PO is on both sides of the trade, and the unique trading keys match, then the active order is killed immediately.

Example: Self Trade Prevention on TMX

Assume the CLOB is as follows:

BID			OFFER		
Broker A, Unique Key "BAYS9"	100	\$10.00	\$10.02	400	Broker B
Broker B	100	\$9.99	\$10.02	100	Broker C
			\$10.02	200	Broker A, Unique Key "ABCD7"
			\$10.03	500	Broker A, Unique Key "BAYS9"

If an incoming order from Broker A with Unique Key "ABCD7" to buy 100 shares @ MKT is entered, then based on Price/Broker/Time priority, the trading engine seeks the opposing Broker A order @ \$10.02 first, however since the Unique Keys match, the entire active order would be rejected.

If an incoming order from Broker A with Unique Key "BAYS9" to buy 500 shares @ MKT is entered. Based on Price/Broker/Time priority, the trading engine again seeks the opposing Broker A order first, and since the keys do not match, it trades 200 @ \$10.02. After orders with broker priority are exhausted, time priority allocates the remaining volume of 300 @ \$10.02 against Broker B.

3.6.2 Self-Trade Management

Self-Trade Management is available on TSX, TSXV and TSX Alpha. Self-Trade Management is an optional trading feature that suppresses trades from the public feed where orders on both sides of the trade are from the same broker and contain the same "self-trade key" defined by the broker. When a self-trade occurs, the order in the book appears on the public feed as a cancelled or updated order, and no trade report is published. The trade is, however, reported to CDS. As these trades are suppressed from the public realm, the trades do not update the LSP, or any trading statistics such as daily volume and turnover.

Self-Trade Management is applied during the MOC session and the Continuous Trading session only. Mixed lot and odd lot volumes are allowed but the self-trade prevention is applied only to the board lot portion of the order.

Keys may be alpha-numeric (any combination of letters and numbers). It does not impact a broker if another broker uses the same key.

Please note that Self-Trade Management and Self-Trade Prevention order features do not interact with each other. If an order with Self-Trade Management matches against an order with Self-Trade Prevention, the trade will be executed and appear on the public tape, even if both orders have matching self-trade keys.

Example: Self Trade Management

Assume the CLOB is as follows:

BID			OFFER		
Broker A, Unique Key "BAYS9"	100	\$10.00	\$10.02	400	Broker B
Broker B	100	\$9.99	\$10.02	100	Broker C
			\$10.02	200	Broker A, Unique Key "ABCD7"
			\$10.03	500	Broker A, Unique Key "BAYS9"

If an incoming buy order from Broker A with Unique Key "ABCD7" for 100 shares @ MKT is entered, then based on Price/Broker/Time priority, the order trades against the Broker A sell order @ \$10.02. As the STM Keys match, the trade is not displayed on the public feed.

If an incoming order from Broker A with Unique Key "BAYS9" to buy 1,500 shares @ MKT is entered, then based on Price/Broker/Time priority, the following trades occur:

BUYER	Seller	Quantity	Price	Notes
A	A	200	\$10.02	Keys do not match, trade is published on public feed.
A	B	400	\$10.02	Trade is published on public feed.
A	C	100	\$10.02	Trade is published on public feed.
A	A	500	\$10.03	Keys do match, trade is not published on public feed.

Section 4 Order Types

TMX supports a variety of order types across its three marketplaces to offer choice while creating fair and orderly markets for all participants.

4.1 Change Former Order instructions (CFO)

An order that is CFO'ed refers to an order instruction to cancel the former order's version by replacing it with the new version. Such orders will retain relative priority in the continuous book only if the change is limited to a decrease in the displayed size of the order, an increase or decrease in the undisclosed portion of an iceberg or a change from sell long to (non-public) sell short or vice-versa or any change to other non-public markers that are incidental. Any other modification to an order, including an increase in the displayed size of the order, and/or price change, and/or change from regular to iceberg order will result in such order losing time priority relative to other equally priced orders and the timestamp will be revised at the time of the modification.

4.2 Market Orders

A market priced order is an instruction to trade the order at prices currently established by the opposite side of the market. Such orders have no trader defined limit on the potential trade price but these orders are subject to TMX bid/ask price limits and TMX freeze price limits to prevent unintentional trade-to-trade price gaps which may otherwise occur if the opposite side of the market is thinner than the trader submitting the market order had expected.

If there is not enough volume in the book to fill the order, the unfilled quantity of the Market order is booked at the Last Sale Price.

Example: Market Orders

Assume the CLOB is as follows:

BID			OFFER		
Order # 001	100	\$10.00	\$10.02	400	Order # 003
Order # 002	100	\$9.99	\$10.02	100	Order # 004

If an incoming sell order #005 for 500 shares @ MKT is entered, then the following trades occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 005	100	\$10.00
Order # 002	Order # 005	100	\$9.99

The remaining unfilled quantity is booked at the LSP, and the resulting CLOB will be:

BID			OFFER		
			\$9.99	300	Order # 005
			\$10.02	400	Order # 003
			\$10.02	100	Order # 004

4.3 Limit Orders

A limit priced order is an instruction to trade the order at prices currently established by the opposite side of the market so long as those prices are within range of the limit price defined by the trader. Any remaining portion of the limit order that is not immediately traded is either booked or cancelled (trader's preference) at the limit price.

Example: Limit Orders

Assume the CLOB is as follows:

BID			OFFER		
Order # 001	100	\$10.00	\$10.02	400	Order # 003
Order # 002	100	\$9.99	\$10.02	100	Order # 004

If an incoming sell order #005 for 500 shares with a Limit Price of \$10.00 is entered, then the following trades occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 005	100	\$10.00

The remaining unfilled quantity is booked at the limit price, and the resulting CLOB will be:

BID			OFFER		
Order # 002	100	\$9.99	\$10.00	400	Order # 005
			\$10.02	400	Order # 003
			\$10.02	100	Order # 004

4.4 Limit On Open (LOO) Orders

A LOO order is a limit order with a specified duration to trade in the opening auction only, with any unexecuted portion cancelled before the commencement of the continuous trading session. The order will have the same standing in the opening allocation priority as a regular limit order participating in the opening auction. The LOO order type provides additional options for participants to manage their opening orders by specifying that the order is to participate only in an opening auction, subject to its indicated limit price.

4.5 Duration

4.5.1 Day Orders

On TSX, TSXV, and TSX Alpha, day orders expire at 5 p.m. and can participate in all trading sessions.

4.5.2 Good Til Cancelled (GTC)

Good Til Cancelled orders expire at 5 p.m., 90 calendar days after entry. These orders participate in all regular trading sessions, including Market on Open, Continuous Trading, Market on Close, and Extended Trading. GTC orders are accepted on TSX, TSX Venture and TSX Alpha.

It is important for participants to verify all open orders each morning to identify any orders that may have expired the night before.

4.5.3 Good Til Date (GTD)

Good Til Date orders expire at 5 p.m. on a specific day. These orders can participate in all trading sessions. Good Til Date orders with a specific time of expiry are not supported. GTD orders are accepted on TSX, TSX Venture and TSX Alpha.

4.5.4 Immediate or Cancel (IOC)

An IOC order is eligible to receive a full or partial fill. Any portion not filled is cancelled immediately. IOC orders are accepted on TSX, TSX Venture and TSX Alpha. IOC orders may have board lot, mixed lot or odd lot volumes.

Example: IOC Orders

Assume the CLOB is as follows:

	BID		OFFER		
Order # 001	100	\$10.00	\$10.02	400	Order # 003
Order # 002	100	\$9.99	\$10.02	100	Order # 004

If an incoming sell order #005 for 500 shares with a limit price of \$10.00 is entered, then the following trades occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 005	100	\$10.00

The remaining unfilled quantity is then cancelled, and the resulting CLOB will be:

	BID		OFFER		
Order # 002	100	\$9.99	\$10.02	400	Order # 003
			\$10.02	100	Order # 004

4.5.5 Fill or Kill (FOK)

An FOK order is eligible to receive a full fill only, and if not fully filled is cancelled immediately. FOK orders are accepted on TSX, TSX Venture and TSX Alpha with board lot volumes.

Example: FOK Orders

Assume the CLOB is as follows:

BID			OFFER		
Order # 001	100	\$10.00	\$10.02	400	Order # 003
Order # 002	100	\$9.99	\$10.02	100	Order # 004

If an incoming sell order #005 for 500 shares with a limit price of \$10.00 is entered, then since the volume cannot be fully filled, no trades occur. The remaining unfilled quantity is then cancelled, and the resulting CLOB will be:

BID			OFFER		
Order # 001	100	\$10.00	\$10.02	400	Order # 003
Order # 002	100	\$9.99	\$10.02	100	Order # 004

4.6 On-Stop Orders

A contingent limit priced order that remains undisclosed until its limit price is triggered at which time it becomes a displayed limit order in the CLOB.

- An undisclosed On-Stop sell order is triggered when the LSP of the same marketplace trades down to or through the limit specified on the On-Stop order.
- An undisclosed On-Stop buy order is triggered when the LSP of the same marketplace trades up to or through the limit specified on the On-Stop order.

Once triggered the On-Stop order will trade in the CLOB subject to its limit with any untraded volume fully displayed at its limit price. On-Stop orders are accepted on TSX, TSX Venture and TSX Alpha.

Example: On-Stop Orders

Assume the CLOB is as follows:

LSP: 10.20

BID			OFFER		
Order # 001	1,000	\$10.00	\$10.20	1,000	Order # 002
Order # 003	500	\$9.90			
Order # 004 On-Stop (hidden)	1,000	\$9.90			
Order # 005	1,000	\$9.80			

An incoming order (Order 006) to sell 1,500 shares @ \$9.90 is entered, the following trades occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 006	1,000	\$10.00
Order # 003	Order # 006	500	\$9.90

The trade at 9.90 sets the LSP triggering the on-stop and the order becomes visible.

Resulting CLOB:

BID			OFFER		
Order # 004 On-Stop (disclosed)	1,000	\$9.90	\$10.20	1,000	Order # 002
Order # 005	1,000	\$9.80			

Newly triggered on-stop orders have lower priority than any displayed visible orders.

Example 2: On-Stop Orders

Assume the CLOB is as follows:

LSP: 10.20

BID			OFFER		
Order # 001	1,000	\$10.00	\$10.20	1,000	Order # 002
Order # 003	500	\$9.90			
Order # 004 On-Stop (hidden)	1,000	\$9.90			
Order # 005	1,000	\$9.80			

An incoming order (Order 006) to sell 2,500 shares @ \$9.50 is entered, the following trades occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 006	1,000	\$10.00
Order # 003	Order # 006	500	\$9.90
Order # 005	Order # 006	1,000	\$9.80

The incoming order trades with all visible orders at various price levels in the book. The 2nd trade at 9.90 sets the LSP, which triggers the on stop, however the visible order (Order 005) has priority of fill before the on-stop order because it was previously displayed.

Resulting CLOB:

BID			OFFER		
Order # 004 On-Stop (disclosed)	1,000	\$9.90	\$10.20	1,000	Order # 002

4.7 Iceberg Orders

An Iceberg order replenishes the displayed order size as executions are received. Only the disclosed portion of the order has priority at the given price level. Users have the option to have the displayed volume refresh to randomly selected sizes by specifying a +/- volume range (DisplayRange) which, when applied to their displayed quantity will establish the ceiling/floor for randomization of the refreshed display size.

When an Iceberg order with a DisplayRange is first entered, or it is refreshed, it will be assigned a random Display Quantity that is in the range of [MaxFloor – DisplayRange or MaxFloor + DisplayRange] inclusive.

For example, an Iceberg order with MaxFloor = 1000 and DisplayRange = 200 originally books with DisplayVolume = 900 [random value between 800-1,200].

The total size of an Iceberg order may be either board lot or mixed lot sized. The disclosed size of an Iceberg order must be a multiple of a board lot, with a minimum display of 1 board lot. If the disclosed volume of an iceberg order becomes an odd lot due to board lot changes overnight, then the order is purged overnight. The odd lot portion of a mixed lot iceberg will only become visible and trade once the board lot portion has been completely exhausted.

When an incoming order trades with a booked Iceberg order for a quantity larger than the disclosed size, one trade will be generated for both the tradable disclosed volume and undisclosed volume.

Both the total size and the disclosed size of icebergs may be amended (CFO'ed). However, when the disclosed quantity is amended, the new disclosed size becomes effective only after the next re-load of the iceberg's undisclosed volume.

Example: Iceberg Orders

Assume the CLOB is as follows:

LSP: 10.05

BID				OFFER		
Order	Hidden Quantity	Displayed Volume	Price	Price	Displayed Volume	Order
Order # 001		100	\$10.00	\$10.20	400	Order 002
Order # 003		500	\$9.90			
Order # 004 Iceberg	9,900	100	\$9.90			
Order # 005		200	\$9.90			

An incoming order (Order 006) to sell 1,500 shares @ \$9.90 is entered, then the order trades with all displayed liquidity at each price level first. The remaining volume is matched against the hidden iceberg volume in one single trade:

BUYER	Seller	Quantity	Price
Order # 001	Order # 006	100	\$10.00
Order # 003	Order # 006	500	\$9.90
Order # 004	Order # 006	100	\$9.90
Order # 005	Order # 006	200	\$9.90
Order # 004	Order # 006	600	\$9.90

Resulting CLOB:

BID				OFFER		
Order	Hidden Quantity	Displayed Volume	Price	Price	Displayed Volume	Order
Order # 004 Iceberg	9,200	100	9.90	10.20	400	Order 002

4.8 Short Sales

A short sale is an order to sell shares that are not owned. Short sell orders are available on TSX, TSXV and TSX Alpha and will be permitted to have the following attributes:

- A Short Sell order is treated identically to a Sell order from a matching allocation perspective.
- Market priced short sell orders will be accepted in the pre-open session and also when a symbol is halted.
- Short sell orders will be accepted with Mixed lot or Odd lot volumes.
- Market on Close (MOC) and Limit on Close (LOC) orders may be short sell orders.

4.8.1 Short Marking Exempt (SME) marker

UMIR rule amendments respecting short sales and failed trades have required the use of a Short Marking Exempt tag. Certain types of traders are not required to mark their orders as short, irrespective of their position (long or short) at the time of order entry. Instead, their orders (buys, sells, and crosses) are designated as Short Marking Exempt via the SME flag. The SME flag is indicative only, and has no effect on how the order interacts with the order book. All other traders enter Short Sell orders when appropriate, and do not use the SME flag on any order.

The Short Marking Exempt tag will reside in the private layer of feed messages securing the anonymity of the designation. The Short Marking Exempt designation will automatically be added to unsolicited messages resulting from market making/odd lot responsibilities. Impacted unsolicited messages include trades due to odd lot responsibilities, minimum guarantee fills and RT participation.

4.9 Anonymous Orders

On an order-by-order basis, a trading participant may elect attribution or anonymity. Anonymous orders on TSX, TSXV, and TSX Alpha may have board lot, mixed lot or odd lot volumes. If attributed, the Participating Organization's unique numeric ID will be publically displayed on all associated market data feeds. If marked anonymous, the non-specific numeric "001" will be associated with the order for the life of that order, including after execution, in all market information displays.

4.9.1 Broker Preferencing

Broker preferencing is a unique feature of Canadian markets. As described earlier, TSX Alpha follows Price/Broker/Time priority while the TSX and TSXV follow Price/Broker/Long Life/Time priority. This means incoming orders to a trading venue to match with other orders from the same broker ahead of similarly priced orders from other brokers, before time priority is considered. In the case of the TSX and TSXV, orders submitted by the same broker and identified as Long Life will receive priority over orders without this attribute from the same broker. An order must be attributed in order to participate in broker preferencing. Jitney orders are excluded from broker preferencing opportunities.

Example: Broker Preferencing

Assume the CLOB is as follows: (ordered in time priority)

	BID		OFFER		
Broker A	1,000	\$9.90	\$10.20	1,000	Broker B
Broker B	500	\$9.90			
Broker C	1,000	\$9.90			

An incoming order from Broker C to sell 1,500 shares @ MKT is entered, the following trades occur in the following order:

BUYER	Seller	Quantity	Price
C	C	1,000	\$9.90
A	C	500	\$9.90

While Broker C was third in priority, their order was filled first due to broker preferencing.

4.10 Bypass Orders

Orders sent containing the bypass flag trade only with passive visible volume, and bypass all undisclosed iceberg volume or any other non-displayed volume including dark orders, dark undisclosed RT participation and RT MGF board lot obligations. Bypass orders may be single-sided or double-sided (a cross).

4.11 Long Life Orders

The long life order type is designed to enhance the quality of execution by rewarding those willing to commit liquidity to the book for a minimum period of time.

Allocation Priority

Orders that are identified as Long Life will receive an allocation benefit within a price level. The allocation priority on TSX and TSXV will be Price/Broker/Long Life /Time.

Orders submitted by the same broker and identified as Long Life will receive priority over orders without this attribute from the same broker. Once all orders from the same broker have been exhausted, orders from other brokers at that price level will be allocated to, with Long Life orders receiving priority over others.

Durations

Long Life orders commit to a minimum resting time of one second in the order book, during which time the order cannot be modified or cancelled. If a cancel or order modification request is received for a Long Life order whose minimum resting time has not elapsed, that cancel or order modification request will be queued by the system. Once the minimum resting time has elapsed, the system will apply a random delay to the message prior to releasing the message to cancel or modify the Long Life order.

If a cancel or order modification request is received for a Long Life order whose minimum resting time has elapsed, the cancel or order modification request will incur the random delay before being processed.

4.12 Cross Types

A cross is a trade resulting from the entry by a broker of both the order to purchase and the order to sell a security, but does not include a trade in which the broker has entered one of the orders as a jitney order.

Cross Interference

On TSX and TSXV, crosses are subject to interference from orders in the book. During continuous trading an attributed cross will seek to match previously booked attributed orders from the same broker at the cross price. The contra-side of the cross that remains unfilled (because it gives up this volume) is then killed immediately. Regular crosses are subject to this “cross interference” and only allowed at or inside the market’s best bid/ask with the exception of internal and bypass crosses.

On TSX Alpha, crosses are not subject to interference from orders in the book, and must be entered at a price that is at or inside the market’s best bid price and best ask price, unless otherwise noted.

4.12.1 Basis Cross

A Basis Cross is a trade whereby a basket of securities or an index participation unit is transacted at prices achieved through the execution of related exchange-traded derivative instruments which may include index futures, index options and index participation units in an amount that will correspond to an equivalent market exposure.

A basis cross may be executed as a board lot, mixed lot or odd lot trade during the regular trading sessions on TSX, TSXV and TSX Alpha and the extended trading session on TSX. The price of the basis cross may be printed outside the best bid and ask and may be up to five decimal places. A basis cross will not set the last sale price.

4.12.2 VWAP Cross

A VWAP Cross is a transaction for the purpose of executing a trade at a volume-weighted average price of a security.

A VWAP cross may be executed as a board lot, mixed lot or odd lot trade during the regular trading sessions on TSX, TSXV and TSX Alpha and the extended trading session on TSX. The price of the VWAP cross may be printed outside the best bid and ask and may be up to five decimal places. A VWAP cross will not set the last sale price.

4.12.3 Contingent Cross

A trade resulting from a paired order placed by a broker on behalf of a client to execute an order on a security that is contingent on the execution of a second order placed by the same client for an offsetting volume of a related security.

A contingent cross may be executed as a board lot, mixed lot or odd lot trade during the regular trading sessions on TSX, TSXV and TSX Alpha and the extended trading session on TSX. The price of the contingent cross must be at or within the best bid and ask and may be up to three decimal places. A contingent cross will set the last sale price.

4.12.4 Internal Cross

An internal cross may be executed during the regular trading sessions on TSX, TSXV and TSX Alpha and the extended trading session on TSX. An intentional cross is at or between the best bid/ask and between two client accounts of a PO which are managed by the PO as a portfolio manager with discretionary authority and is not subject to interference.

4.12.5 Bypass Cross

The cross bypass order (referred to in UMIR as a “designated trade”) will execute intact even when outside the current best offer and best bid price. A cross bypass order will not be rejected and is not subject to cross interference.

Bypass cross can be printed outside the Protected NBBO. When a trader needs to execute a pre-arranged trade outside of the Protected NBBO, all better priced visible volume must be displaced first before printing the cross. Bypass orders can be used to sweep the visible volume without interference from the undisclosed volumes, and therefore limit the trader’s exposure.

If then, the subsequently printed cross is also marked as bypass, it will not be impacted by any quotes resulting from previously hidden volume. Smart order routers using 'spray' methodology to fulfill the best-price obligation may also use bypass orders when routing orders at prices outside of the Protected NBBO.

4.12.6 Derivative Cross

Participants entering a pre-arranged cross to offset a trade in a related derivative instrument must designate the cross as a Derivative Cross.

A Derivative cross may be executed as a board lot, mixed lot or odd lot trade during the regular trading sessions on TSX, TSXV and TSX Alpha and the extended trading session on TSX. The price of the Derivative cross must respect the TBBO, is subject to cross interference, and will set the NLSP.

4.12.7 Special Trading Session Cross

A special trading session cross may be executed on TSX and TSXV. Also known as Specialty Price Cross, this is a closing price cross resulting from an order placed by a PO on behalf of a client for execution in the Special Trading Session (also known as the Extended Trading Session) at the last sale price. The rounded LSP may be used if the LSP is at an invalid tick. A special trading session cross may be entered as a board lot, mixed lot or odd lot trade. A special trading session cross cannot change the last sale price.

4.13 Order Features

4.13.1 TSX Alpha Order Processing Delay

New orders, order amendments and order cancels entered without an explicit post only instruction will incur a delay of between 1 and 3 milliseconds prior to TSX Alpha processing the order. Post only orders that do not incur the processing delay will be subject to a minimum volume requirement on the order to encourage sizable liquidity provision. Conditions under which TSX Alpha will accept Post Only orders are described in section 3.4 Post Only.

4.13.2 Minimum Guaranteed Fill (MGF)

See section 5.1.2 Minimum Guaranteed Fill (MGF) Size.

4.13.3 Buy-ins

In order to support CDS in cases where a seller has failed to deliver a security following a trade, TSX has developed a special "Buy-In" facility to locate alternate sellers capable of immediately delivering the security, therefore enabling CDS to quickly and efficiently clear the failed position.

Buy-In Procedures:

On a daily basis, CDS provides a list of securities that Participating Organizations have failed to make delivery on.

TIME (ET)	Procedures
1:30 PM (1st Cycle)	TSX receives and posts the preliminary Buy-In list. At this point, other Participating Organizations have the opportunity to provide liquidity by submitting Buy-In orders.
2:45 PM (2nd Cycle)	TSX receives and posts the Final Buy-In list. This list identifies the remaining securities that still need to be delivered.
3:00 PM	Cut-off for accepting Buy-In orders.

Upon completion of the Buy-In period, TSX allocates fills on an equal by member basis to the sellers and calculates a price. This price is based on the last board lot trade before 3:00 p.m. plus a premium.

TSX manually enters these trades under a generic trader ID for each PO that are cleared by CDS on a same-day basis. Between 3:20 p.m. and 3:40 p.m., TSX Trading Services will provide transaction confirmations. This process efficiently clears failed delivery trades and helps to maintain overall market integrity.

Buy-In Price = Last Board lot Sale Price + Premium

For additional information about Buy-Ins or to participate in a Buy-In, please contact Trading Services.

Section 5 Market Maker Program & Odd Lot Dealer System

5.1 TSX Market Maker Program

The Market Maker program exists exclusively on TSX. The role of the Market Maker is to augment liquidity, while maintaining the primacy of an order-driven continuous auction market based on price-time priority. The Market Maker system maximizes market efficiency and removes the interfering influence of a traditional specialist. In the TSX environment, a Market Maker manages market liquidity through a passive role. Market Makers are visible only when necessary to provide a positive influence when natural market forces cannot provide sufficient liquidity.

Responsible Designated Traders (also referred to as Registered Traders or RTs) represent Market Maker Firms and act on behalf of the firm to ensure all responsibilities are met. There may be up to two Market Makers, a Primary Market Maker, and a Secondary Market Maker, on any TSX-listed corporate security.

Market Makers do not have any proprietary pre-trade information or access to information regarding trade order entry of other participants.

For more information on the program and to view the TSX Market Making Program Guide, please visit: <https://www.tsx.com/trading/toronto-stock-exchange/order-types-and-features/market-maker-program>

TSX Market Maker responsibilities:

- Call a 2-sided market providing market continuity within a pre-specified range.
- Contribute to market liquidity and depth.
- Maintain activity in the market.
- Fulfill the needs of retail-sized order flow through guaranteed minimums (MGF) that interact with aggressive orders whenever orders in the central limit order book do not meet the size required to fill aggressive orders at the quote (see MGF section below).
- Assist in the opening and with inquiries and anomalies.
- Service odd lots (see odd lot section below).

Performance measurement system

TSX continuously monitors the performance of all Market Makers with respect to their ability to contribute to the overall market in terms of creating liquidity, depth and continuity.

- Spread Maintenance – Measures the Market Maker’s ability to call a 2-sided market.
- Participation – Measures the participation of Market Makers in their security of responsibility.
- Liquidity – Measures whether Market Makers are lining the book with reasonable depth.

Allocation of securities of responsibility

Securities allocations are considered firm privileges and responsibilities. These allocations are awarded when securities are newly issued and when there are changes in responsibility. The TSX Allocation Committee determines which firms are awarded securities to manage as Market Makers based on among others:

1. A firm’s overall performance in managing existing responsibilities;
2. A firm’s competitive service level bids;
3. A firm’s ability to remain within its qualification requirements; and
4. Special request by issuers.

Qualification requirements of a Market Maker firm

Generally Market Maker firms are required to:

- Maintain sufficient firm capital based on the classification in securities of responsibility;
- Maintain a minimum number of assignments so as to maintain their presence; and
- Maintain a certain ratio of assignments in highly liquid versus less liquid securities.

5.1.1 Odd Lots

RT's are obligated to provide an automatic immediate fill for incoming tradable odd lots at the Protected NBBO. Odd lots resting in the TSX odd lot book which later become tradable due to a change in the Protected NBBO are also automatically filled by the RT at the Protected NBBO. Odd lot matching is suspended if the Protected NBBO is locked or crossed and will resume immediately when the Protected NBBO changes such that it is no longer locked or crossed. If the odd lot order's price is not marketable (or if there is no RT) the odd lot order is displayed in the odd lot book and is eligible to trade continuously at its limit price (without regard to the CLOB price) and will trade at that price if an opposite side odd lot order is entered with the exact same volume priced at or better than the resting odd lot order's price. Odd lots only trade as FOK which means partial fills are not accepted. It is possible for the odd lot book to display orders with overlapping prices when resting odd lot orders can match on price but not on volume.

5.1.2 Minimum Guaranteed Fill (MGF) Size

RT's must also guarantee automatic complete fills for marketable, board lot-sized, client orders that are equal to or less than the MGF size plus the size of the opposite visible TSX best bid or offer. The MGF size is a publicly disclosed volume threshold that can change during the day at the RT's discretion. Orders at or below the MGF size that contains the client marker must declare whether they are eligible for MGF fills. All orders marked other than "client" are not MGF eligible.

The MGF facility is intended to fill small retail investors with positions that are smaller than average. The MGF facility is not intended for systematic and/or repeated MGF access by sophisticated high volume or high frequency clients. In order to interact with the MGF facility, orders must be sent through a pre-qualified MGF-eligible Trader ID. If a particular MGF trade is subsequently deemed to be unsuitable for MGF, the trade is cancelled with the cancellation costs attributed to the customer that neglected to mark its unsuitable client order as MGF ineligible.

Example: MGF Size

Assume the CLOB is as follows:

RT: AVGJOE MGF: 500

BID			OFFER		
Order # 001	100	\$10.00	\$10.02	400	Order # 002

If an incoming client order (Order 003) to sell 1,000 shares @ MKT is entered, then since the order size is greater than the MGF size of 500 plus the size of the best bid of 100 (600 shares total), the order is MGF-ineligible and a trade will occur against the available resting CLOB liquidity without any guaranteed fill from the RT:

The following trades will occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 003	100	\$10.00

The remaining 900 volume will be booked at the last sale price of \$10.00

Resulting CLOB:

BID	OFFER
	\$10.00 900 Order # 003
	\$10.02 400 Order # 002

Example 2: MGF Size

Assume the CLOB is as follows:

RT: AVGJOE MGF: 500

BID	OFFER
Order # 001 100 \$10.00	\$10.02 400 Order # 002

Alternatively, if an incoming client order (Order 003) to sell 600 shares @ MKT is entered, then since the order size is less than or equal to the MGF size of 500 plus the size of the best bid of 100 (600 shares total), the order is MGF-eligible and there is not enough resting liquidity to fully fill the client order, a guaranteed fill from the RT will occur for the balance of the order.

The following trades will occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 003	100	\$10.00
RT	Order # 003	500	\$10.00

Resulting CLOB:

BID	OFFER
	\$10.02 400 Order # 002

5.1.3 RT Participation

Registered Trader (RT) participation is an optional Market Maker feature that enables RTs to trade passively at TSX quoted prices to accumulate or flatten a position in their assigned securities. RTs can turn on “participation” independently for each side of the market in their assigned securities. When participation is turned on the RT will automatically generate “participation” orders to trade with all incoming orders that are MGF sized or less, except for orders with the following attributes:

- Bypass orders
- DRK orders
- Orders with Account Type = “ST” and from the same broker as the RT

MGF eligible orders are not affected by RT participation and these orders continue to be guaranteed by the RT at the best displayed price.

The RT auto-generates orders at each price level to trade with no more than 40% of the incoming order's volume (after the incoming order's broker priority volume has been allocated to other orders in the book). RT participation will fill no more than 40% of the incoming orders described above even in cases where the CLOB could fully fill the incoming order. At each price level the RT allocated participation volume is no greater than the volume allocated to other non-RT booked orders.

Allocation of the 40% RT participation is rounded down to nearest full board lot. One exception exists in the case when an order is for 200 shares – allocating 40% would result in no RT participation, so the order is allocated 50% or 100 shares.

If the RT has a booked order with time priority over all other booked order at that price level the incoming order will trade against that booked RT order at that price level rather than generate an RT auto-participation order at that price level. This mechanism ensures the rest of the orders in the order book have ample opportunity to trade.

Participation Self-Trade Prevention

In order to prevent wash trades, RT's may optionally define a self-trade key to associate with their Trader ID. If an incoming order from the same broker as the RT would generate a participation fill, and that incoming order has the same self-trade key as the RT, then the participation fill will be prevented. The exact behaviour will depend on the self-trade instruction of the active order.

- If the active order has an 'EM' (execute match) instruction, then the participation fill will occur but will be suppressed from the tape. The fill will be marked as a Self Trade.
- If the active order has an 'NM' (cancel newest), 'OM' (cancel oldest), or 'DM' (decrement larger and cancel smaller) instruction, then the participation fill will be prevented altogether.

Note that in cases where there are two RTs assigned to the symbol, the other RT may still receive a participation fill if they have participation enabled.

Example: RT Participation

Assume the CLOB is as follows:

RT: JOEAVG MGF: 500 Participation: ON

BID			OFFER		
Order # 001	300	\$10.00	\$10.02	400	Order # 002
Order # 004	200	\$10.00	\$10.02	100	Order # 003

If an incoming client order (Order 005) to sell 500 shares @ MKT is entered, then since RT Participation is on, the incoming trade will be allocated 40% to the RT and 60% to the resting CLOB liquidity. The following trades occur:

BUYER	Seller	Quantity	Price
Order # 001	Order # 005	300	\$10.00
RT	Order # 005	200	\$10.00

Resulting Order Book:

BID			OFFER		
Order # 004	200	\$10.00	\$10.02	400	Order # 002
			\$10.02	100	Order # 003

Example 2: RT Participation

Assume the CLOB is as follows:

RT: JOEAVG MGF: 500 Participation: ON

BID			OFFER		
Order # 001 - JOEAVG	300	\$10.00	\$10.02	400	Order # 002
Order # 004	200	\$10.00	\$10.02	100	Order # 003

If an incoming client order to sell 500 shares @ MKT is entered, then since the RT already has an open order with time priority, the incoming order will trade with the booked order rather than generate a net new Participation order. The following trades occur:

BUYER	Seller	Quantity	Price
Order 001 - JOEAVG	Incoming order	300	\$10.00
Order # 004	Incoming order	200	\$10.00

5.2 TSXV Odd Lot Dealer Program

TSXV odd lot dealers provide an automatic immediate fill for incoming tradable odd lots at the Protected NBBO. Odd lots resting in the TSXV odd lot book which later become tradable due to a change in the Protected NBBO are also automatically filled by the odd lot dealer. Odd lot matching is suspended if the Protected NBBO is locked or crossed and will resume immediately when the Protected NBBO changes such that it is no longer locked or crossed.

5.3 TSX Alpha Odd Lot Dealer Program

TSX Alpha odd lot dealers provide an automatic immediate fill for incoming tradable odd lots at the better of the Protected NBBO and the Alpha best bid or offer. Odd lots resting in the Alpha odd lot book which later become tradable due to a change in the Protected NBBO or Alpha best bid or offer are also automatically filled by the odd lot dealer at the better of the Protected NBBO and the Alpha best bid or offer. Odd lot matching is suspended if the Alpha BBO plus the Protected NBBO is locked or crossed and will resume immediately when the Alpha BBO plus the Protected NBBO changes such that it is no longer locked or crossed.

Section 6 Other Features

6.1 Minimum Ticks

6.1.1 Standard Trading Units

Standard trading units are based on the security's previous day per-share closing price on TSX or TSXV:

SECURITY'S CLOSING PRICE	Standard Trading Units (Boards Lots)
\$1 and up	100 shares
\$0.10 and less than \$1	500 shares
Under \$0.10	1,000 shares
Convertible Debentures	\$1,000 face value

NOTE: For TSX Alpha the trading unit is set based on the TSX or TSXV closing price.

Odd Lots

Orders with volume less than a standard trading unit are considered odd lot and do not trade in the regular CLOB.

On TSX, TSXV and TSX Alpha, either Registered Traders (RT) or Odd Lot Dealers (OLD) perform auto execution of odd lots. The RT / OLD automatically guarantees a complete fill at the Protected NBBO price for Odd Lot orders priced at or better than the opposite side's Protected NBBO market price. Note: Odd Lot orders on TSX Alpha will be filled by the OLD at the better of the Protected NBBO and the TSX Alpha BBO. If the odd lot order's price is not marketable (or if there is no RT/OLD) the odd lot order is displayed in the odd lot book and is eligible to trade continuously at its limit price (without regard to the CLOB price) and will trade at that price if an opposite side odd lot order is entered with the exact same volume priced at or better than the resting odd lot order's price. Odd lots only trade as "Fill or Kill" which means partial fills are not accepted. It is possible for the odd lot book to display orders with overlapping prices when resting odd lot orders can match on price but not on volume.

Mixed Lots

An order that is mixed (with both a board lot and odd lot portion) is effectively split into two separate orders at the time of entry. The board lot portion trades normally in the CLOB and the odd lot portion is treated as an odd lot order.

6.1.2 Standard Trading Price Increments

Standard Trading Price Increments are based on the order's price level:

SECURITY PRICE LEVEL	Standard Trading Price Per Share (Cents)
\$0.005 - \$0.495/share	\$0.005
\$0.50 and above	\$0.01

6.2 Trading Controls

6.2.1 Halts

Halts are manually applied and lifted by Trading Services, and notification messages are sent out on all public market data feeds. Securities may be halted or lifted at any time during the trading day, from the Pre-Open until the end of the Extended Trading session.

TSX and TSXV may employ either of the two types of halts that are described below (Matching Halt and Full Halt). Since there is no opening auction, only a Full Halt is supported on TSX Alpha.

No Matching Halt

The majority of halts are “No Matching” Halts, and are imposed by Regulators pending news regarding the issuer of the security.

During a No Matching halt, order entry and amendment is allowed, as well as cancels, but there is no matching. When in No Matching halt state, the security behaves as in the Pre-Open Trading session, where the book can be crossed and the indicative auction price is continually calculated based on order activity in the book. A Calculated Opening Price (COP) is broadcasted while the stock is in halt state. When the halt is lifted, an auction similar to the Market Opening takes place, and continuous trading resumes. For examples, please see the Opening Allocation section.

Full Halt

In a full halt, order entry, order amendment and order matching is suspended, however orders may be cancelled.

6.2.2 Marketplace Threshold Parameters

Marketplace thresholds operate as part of a multi-tiered approach to preventing erroneous orders and controlling short-term, unexplained price volatility. The Marketplace Thresholds are based on principles focused on reducing the need for regulatory intervention, limiting regulatory burden on industry stakeholders, and supporting the market-wide operation of the price discovery mechanism.

A marketplace threshold parameter is applied to each security, as a permissible price deviation limit from a pair of reference prices:

- The current National Last Sale Price (NLSP).
- The NLSP as of the beginning of the current minute (e.g. as of 10:14:00 if the current time is 10:14:37).

The price deviation limit varies from security to security, based on security type and price range, but will always be at or inside the limits specified by the IIROC Marketplace Threshold guidance.

Note: Due to the higher risk of price dislocation in thinly-traded ETF securities, each ETF reference price starts out in the morning as a snapshot of its NBBO midpoint from the end of the previous day. The NBBO midpoint continues to serve as both reference prices until the first trade of the day, at which point the NLSP behaviour described above takes over.

If an incoming order would trade at a price exceeding the deviation limit from either reference price, the order (or remainder, if already partially filled) is treated in one of two ways:

- The order is killed back to the client; or
- The order is booked at the threshold price, or one trading increment from the opposite side of the NBBO, whichever is less aggressive. Note that this behaviour is not available for Cross orders.

Clients can choose the desired behaviour via an optional tag on their order entry messages.

Marketplace thresholds apply only in the Continuous trading session, on orders whose trades would set the National Last Sale Price.

6.2.3 Bid/Ask Limits

Bid/Ask Tick Limits are a TMX Market Quality safeguard available across TSX, TSXV and TSX Alpha that prevents Market or Better Price limit orders from trading deep into the book, thus causing large anomalous price swings. Bid/Ask Tick Limits are configurable across the market based on the security's quoted price, and apply automatically to market and better price limit orders. This mechanism limits the number of ticks past the best bid price or best ask price an order can trade through. If an incoming tradable order hits the bid/ask limit and still has volume remaining, the remaining volume is booked at the bid/ask limit.

START PRICE	0.00	1.00	5.00	50.00	100.00
Equities	0.10	0.25	0.50	1.00	5.00
Debentures	5.00	5.00	5.00	5.00	5.00

6.2.4 Single Stock Circuit Breakers

Single-stock circuit breakers are an important tool to help mitigate short-term volatility in the trading of individual stocks. Recent regulatory changes introduced single stock circuit breakers. This means that a five-minute halt of trading in a security will now automatically trigger across all Canadian marketplaces if the price of the security swings 10% or more within a five-minute period.

Initially, SSCBs will apply to all securities included in the S&P/TSX Composite Index, as well as to those exchange-traded funds (ETFs) which are comprised principally of listed securities. All trades executed at more than 5% beyond the price that triggered the SSCB will be cancelled.

6.3 Order Markers

All markets support markers required for regulatory purposes including:

- Insider Account (IA)
- Significant Shareholder (SS)

6.3.1 NCIB Marker

Participating Organizations, when acting as a broker making purchases on behalf of a listed issuer pursuant to a normal course issuer bid, must comply with certain exchange requirements that are imposed on listed issuers. The NCIB marker is used to identify such orders. For more information on NCIB compliance, see the TSX Rule Book Part 6 – Division 5.

6.4 Account Types

All three markets support the following account type markers:

- NC – Non-Client
- IN – Inventory
- CL – Client
- OT – Options Market Maker
- BU – Bundled Order Designation

TSX and TSX Alpha support the following account type markers:

- ST - Specialist (RT)
- OF - Options Firm
- MP - ME Pro Order

6.5 Debentures

TSX and TSXV support trading in debentures, while TSX Alpha does not. Debentures are traded in increments of \$1,000 face value. Debentures are not assigned to RT's / Odd Lot Dealers therefore odd lot debenture orders are not auto-executed.

6.6 Sustainable Bonds

TSX supports trading in Sustainable Bonds, while TSXV and TSX Alpha does not. Sustainable bonds posted on TSX must be in USD or CAD and must be CDS eligible. They can be identified through symbology with the extension “.SB” followed by an alpha character to denote the specific issue. For example, a Province of Ontario Sustainable Bond with a coupon of 1.95% and a maturity date of January 27, 2023 would have a symbol of ONT.SB.A, while a Sustainable Bond from the same issuer with a coupon of 2.65% and maturity date of February 4, 2025 would have a symbol of ONT.SB.B. TSX does not support odd lots, Market on Close, dark orders and the market making program on sustainable bonds.

6.7 USD-Denominated Securities

TSX, TSXV and TSX Alpha support trading of securities denominated in USD. USD-denominated securities are identified through the symbology with the security's symbol ending with an “.U” suffix.

6.8 Clearing Arrangements

All transactions executed are reported to CDS Clearing and Depository Services Inc. at day end for clearing and settlement and management of counterparty and settlement risk. The CDS Participant Rules govern the operation of CDS clearing and settlement services, including risk management.

Each PO configures default clearing instructions defined at the firm-wide level. Special clearing instructions can be configured for special traders or trades.

6.8.1 Clearing Give-up

Give-up refers to the process where a PO provides special instructions to the TMX to let a trade settle under a different trader ID and/or PO, usually for the purposes of consolidating a derivative position. Contact Trading Services for more information on arranging a give-up.

6.8.2 Special Settlement Terms

Orders may be marked with special instructions for settlement. These orders are traded individually, not in relative priority. A special settlement terms order is displayed in the special settlements terms “book” and can be traded with an order that specifically targets that resting order by specifying its intention to trade by matching the resting order’s sequence number. Special settlement terms trades can also be crossed by a broker.

TSX Alpha does not support special settlement terms. Special settlement terms supported on TSX and TSXV include: Cash, Cash Today, Delayed Delivery, Non-net, and Non-resident. Settlement terms orders will match and trade with each other when the terms on the orders match.

6.9 Erroneous Trade and Trade Amendment Policy

In the event that a broker executes an order in error (“erroneous trade”) the broker will be asked to contact the Trading Services desk. The Trading Services desk may, upon request of the broker, contact the other party to the trade to request cancellation of the trade. Both parties to the trade must agree to the trade cancellation or they may elect to contact IIROC for assistance.

In the event of a technical, systems, or access problem that has substantially impaired or impacted access or trading, TMX has the discretion to cancel an impacted trade without the consent of both parties and subject to IIROC approval. Otherwise, TMX cannot unilaterally cancel a trade without the consent of both parties and without consultation with and approval of IIROC.

In the event of a trade that requires a change or amendment to price and/or quantity the broker will contact IIROC for approval. If IIROC approves the amendment, they will then contact the TMX Trading Services Desk to instruct TMX to make the change.

This policy excludes any requests received by IIROC or other securities regulator to cancel or amend a trade.

In the event of a dispute between two brokers, TMX will make available any information required to settle the dispute, subject to any confidentiality restrictions on the disclosure of such information.

6.10 Reports

6.10.1 Daily Diary Files

The TMX Daily Diary files are a set of daily reports generated for each participant and automatically emailed as password protected zipped .txt files following the close of each trading day. These reports include:

- **Open Orders By Book** – a detailed list of all outstanding open orders from the PO.
- **Open Order By User ID** – a detailed list of all outstanding open orders organized by User ID.
- **Removed Orders by Book** – a list of all cancelled orders during the day.
- **Removed Orders by User ID** – a list of all cancelled orders during the day by User ID.
- **Diary List By Price** – a detailed summary of all trades executed during the day by price.
- **Diary List By Time** – a detailed summary of all trades executed during the day by time.

TSX, TSXV, and TSX Alpha support all six reports.

6.10.2 Compliance Alerts Reporting System (CARS)

TMX has developed a system that produces daily reports that enable the compliance office of a broker to monitor

and track trading infractions and alerts on a post-trade basis. TSX Compliance Alerts Reporting System (CARS) is an invaluable tool for the discerning compliance officer who can use the tool to monitor the trading activity of the firm and to assist in developing strategic action items to deal with the findings. CARS will also demonstrate the firm's proactive stance on compliance to regulators and auditors from other firms.

CARS allows subscribers to select a maximum of seven unique alert monitors and to input their own specific parameter ranges. Subscribers can select from the following alert monitors:

- **JTNY (Jitney)** – The system will provide a potential front-running alert to find instances within a broker when an order marked "jitney" has traded just ahead of an order marked "client" and the "jitney" order received a better fill price.
- **ANON (Anonymous)** – The system will provide a potential front-running alert to find instances within a broker when an order marked "anonymous" has traded just ahead of an order marked "client" and the anonymous order received a better fill price.
- **CPT (Client Principal Trade)** – The system will provide a potential customer/principal trading rule alert to find instances where a "pro" (i.e. Non Client, Specialist, Inventory) trades against a client within a broker without improving the fill price to their client based on the current bid/offer price.
- **Restricted Stock** – The system will provide restricted stock alerts to detect all trades for restricted stock symbols specified by the broker.
- **APTC (Alerts Prior To Close)** – The system will provide alerts to detect patterns of potential price manipulation at market close.
- **Daily Cross Report** – The system will provide a cross report to filter various types of crosses that occurred at either the bid or ask price.
- **Daily Close Report** – The system will provide a daily closing report to indicate which stock prices the broker has moved up or down at the end of the day.

Each day, the CARS application creates reports which are available on a secured website.

Reports

Reports are generated in CSV file format which allows subscribers to customize the data using various software programs. Reports for TSX, TSXV, and TSX Alpha are created and saved as separate files.

Security

Alert/Report parameters will be entered using a secured web browser interface. The reports will be available on a secure website the next business day. All CARS data is secured from external parties and access within TMX will be restricted to defined personnel.

6.11 Fees & Billing

Fees

Each market's fee schedule is available on the TMX website.

Billing

Subscribers will be provided with an invoice for their account on the 3rd business day at the beginning of each month, which will detail all trading activity and applicable fees for the previous month. These detailed supporting trade files are provided in a .zip file attached to the automatic email delivery of all invoices.

Subscribers are required to participate in a Pre-Authorized Debit Plan or pay through CDS (directly or via a Carrying Broker). Subscribers will also receive via e-mail zipped password protected Billing Reports with the previous month's trade details aggregated by trader, symbol and product.

For more information

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