

Morgan Stanley

# **MS RPOOL (ATS-6) FIX Specification**

## **Overview**

Morgan Stanley & Co. LLC operates MS RPOOL, a real-time continuous match dark liquidity pool that matches orders from SEC registered broker-dealer clients on behalf of retail customers (i.e., retail brokers), eligible institutional customers of Morgan Stanley and its affiliates, including institutional customers who are SEC registered investment advisers, pension funds, endowments and asset managers (i.e., institutional customers), and Morgan Stanley and its affiliates acting as or on behalf of eligible retail brokers or eligible institutional customers, or acting as principal. All executions in MS RPOOL occur at midpoint of the best bid and offer, providing price improvement to all orders matched in MS RPOOL. MS RPOOL also accepts conditional indications that represent a nonfirm willingness to transact.

## **Hours of Operation**

9:30 a.m. to 4:00 p.m.

MS RPOOL will generally wait for the primary opening print in each stock before beginning to execute in that stock.

## **Section 1 - Firm Orders\***

### **Order Types and Designations**

- Market
- Limit

MS RPOOL accepts Time in Force of "Day" and "Immediate or Cancel" (IOC). MS RPOOL rejects odd lot orders. MS RPOOL cancels the odd lot portion of mixed lot orders after the round lot portion is fully executed.

\* For information regarding Conditional Indications Functionality, including information on sending Conditional Indications and Firm-Up Orders, please see Section 2 below entitled "Conditional Indications Functionality."

### **Minimum Fill Quantity**

The minimum fill quantity constraint applies to every execution, except when the remainder of the order is less than the minimum fill quantity, in which case MS RPOOL will execute the remaining quantity to fully complete the order. MS RPOOL does not aggregate multiple orders to satisfy a minimum fill quantity on a single order.

### **FIX Integration**

The MS RPOOL specific tags below should be used in conjunction with the Morgan Stanley FIX Spec. Please contact your Morgan Stanley account representative to discuss defaulting any of the below settings.

Orders sent to MS RPOOL without required tags and values as specified below will be rejected.

## MS RPOOL FIX Specification

Tag	Tag Name	Value(s)	Req'd	Notes
18	ExecInst	1 – Not Held	Y	All orders must have 18=1.
40	OrdType	1 – Market 2 – Limit	Y	
54	Side	1 – Buy 2 – Sell 5 – Sell Short 6 – Sell Short Exempt	Y	
57	TargetSubID	RPOOL	Y	Case sensitive
59	TimeInForce	0 – Day 3 – Immediate or Cancel	Y	MS RPOOL matches orders between 9:30 a.m. - 4:00 p.m. Orders are accepted starting at 8:00 a.m. All open orders will be cancelled after 4:00 p.m.
110	MinQty	Minimum fill quantity in increments of a round lot	N	MS RPOOL enforces minimum fill quantity for each execution. Minimum fill quantity is calculated to be the lesser of the remainder of order and the minimum fill quantity provided on the order.
10302	ExecuteAsCapacity	A – Agency Only E – Either Agency or Principal	N	Defaults to trading with both Agency and Principal flow (E).
10705	AllowedCrossType	Used to manage Self-Trade Prevention	N	Please contact your Morgan Stanley account representative to discuss setting this field.

## **Section 2 - Conditional Indications Functionality**

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## 1 Executive Summary

This section specifies the means of accessing Morgan Stanley & Co. LLC (“Morgan Stanley”) conditional indication functionality in MS RPOOL via FIX protocol.

### 1.1 Introduction

Morgan Stanley’s MS RPOOL is a real-time, continuous match dark liquidity pool that matches orders for NMS stocks from MS RPOOL participants. MS RPOOL also accepts conditional indications from MS RPOOL participants.

### 1.2 Definitions

A conditional indication represents a non-firm willingness to transact (each, a “**Conditional Indication**” or “**CI**”). A Conditional Indication that can interact with one or more eligible contra-side orders and/or Conditional Indications will receive a firm-up request (“**Firm-Up Request**”). MS RPOOL participants who send Conditional Indications receive Firm-Up Requests from MS RPOOL when an order and/or Conditional Indication that matches with such participant’s Conditional Indication is available in MS RPOOL (“**Conditional Match**”). A firm-up order (“**Firm-Up Order**”) is an order sent to MS RPOOL in response to a Firm-Up Request.

## 2 General

Morgan Stanley supports Conditional Indications on FIX version 4.2. All FIX tags referenced in this document are expected on a FIX 4.2 session.

### 2.1 Cancel on Disconnect (COD)

Morgan Stanley provides cancel on disconnect service on Firm-Up Orders but not on Conditional Indications.

### 2.2 Supported Securities

NMS stocks are generally eligible as Conditional Indications. Pink Sheets, Bulletin Board products, Options and Futures are not supported.

### 2.3 Time in force

Conditional Indications must have a TimeInForce of Day.

### 2.4 Odd Lots

MS RPOOL rejects odd lot orders. MS RPOOL cancels the odd lot portion of mixed lot orders after the round lot portion is fully executed.

MS RPOOL rejects odd lot Conditional Indications. MS RPOOL accepts mixed lot Conditional Indications.

### 2.5 Minimum Fill Quantity

Orders sent to MS RPOOL can be designated with a minimum fill quantity instruction. MS RPOOL does not aggregate multiple contra-side orders to satisfy a minimum fill quantity on a single order.

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Conditional Indications sent to MS RPOOL can be designated with a minimum fill quantity instruction. MS RPOOL does not aggregate multiple contra-side orders or Conditional Indications to satisfy a minimum fill quantity on a single Conditional Indication in MS RPOOL.

The minimum fill quantity constraint applies to every execution in MS RPOOL, except when the remainder of the order is less than the minimum fill quantity, in which case MS RPOOL will execute that quantity.

The minimum fill quantity constraint applies to every Conditional Match in MS RPOOL.

## 2.6 Supported Symbologies

Morgan Stanley supports symbology identification as per the table below.

SYMBOLGY	TAG VALUES
Exchange Symbol (CQS format)	48=ExchangeSymbol, 22=8
CUSIP	48=CUSIP, 22=1
SEDOL	48=SEDOL, 22=2
Bloomberg Symbol	48=BloombergSymbol,22=A
ISIN number	48=ISIN, 22=4, requires tag 207
RIC code	48=RIC, 22=5

Security Symbol should be specified using tag 55 (Symbol) in CQS format along with tag 65 (SymbolSfx) in CMS format. When using tag 48 (SecurityID) in ExchangeSymbol format, the symbol suffix is understood to be embedded in the field carrying the symbol (tag 48) in CMS format.

## 3 Supported Conditional Indication Messages

### 3.1 Conditional Indication

Morgan Stanley supports New Order Single messages (tag 35=D) for Conditional Indications.

TAG	FIELD NAME	REQ'D	COMMENTS
	StandardHeader	Y	
11	CIOrdID	Y	Unique identifier of CI as assigned by institution.
21	HandlInst	Y	Instructions for CI handling. Expected Value: 1
18	ExecInst	N	Execution instructions. Allowed value: 1
110	MinQty	N	Minimum quantity of CI to be matched/executed.
55	Symbol	Y	Security Symbol (CQS).
65	SymbolSfx	N	Additional information about the security.
48	SecurityID	N	Security identifier.
22	IDSource	N	Identifies class of SecurityID

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54	Side	Y	Side of CI. Supported values: 1 – Buy 2 – Sell 5 – Sell Short 6 – Sell Short Exempt
60	TransactTime	Y	Time CI request was initiated/released by the trader or trading system. UTC time stamp.
38	OrderQty	Y	Quantity of CI.
40	OrdType	Y	Type of CI. Allowed Values: 2 – Limit
44	Price	Y	All Conditional Indications require limit prices.
47	Rule80A (Order Capacity)	N	Capacity of CI. Default is "A".
6531	ConditionalIndicator	Y	Used to indicate that this is a Conditional Indication. Required value: 0
10302	ExecuteAsCapacity	N	A – Agency Only  E – Either Agency or Principal  Defaults to trading with both Agency and Principal flow (E).
10705	AllowedCrossType	N	Used to manage Self-Trade Prevention  Please contact your Morgan Stanley account representative to discuss setting this field.
StandardTrailer		Y	

**3.2 Conditional Indication Cancel**

The CI cancel request message (35=F) requests the cancelation of an existing Conditional Indication.

TAG	FIELD NAME	REQ'D	FIX SPEC COMMENTS
StandardHeader		Y	
41	OrigCIOrdID	Y	CIOrdID of CI being canceled. If multiple replaces occurred, the latest CI CIOrdID should be referenced.
37	OrderID	N	Unique identifier of most recent CI as assigned by broker.
11	CIOrdID	Y	Unique ID of cancel request as assigned by the institution.
55	Symbol	Y	Security Symbol (COS). Must match original CI.
65	SymbolSfx	N	Additional information about the security. Must

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			match original CI.
48	SecurityID	N	Security identifier. Must match original CI.
22	IDSOURCE	N	Identifies class of SecurityID. Must match original CI.
54	Side	Y	Side of CI. Supported values:  1 – Buy 2 – Sell 5 – Sell Short 6 – Sell Short Exempt
60	TransactTime	Y	Time CI request was initiated/released by the trader or trading system. UTC Time stamp.
38	OrderQty	N	Quantity of CI.
6531	ConditionalIndicator	N	Used to indicate that this is a Conditional Indication. Allowed value: 0
StandardTrailer		Y	

**3.3 Conditional Indication Replace Request**

The CI cancel/replace request (35=G) is used to change the parameters of an existing Conditional Indication. The only parameters allowed to change are quantity (tag 38), price (tag 44) or minimum quantity (tag 110).

TAG	FIELD NAME	REQ'D	COMMENTS
StandardHeader		Y	
37	OrderID	N	Unique identifier of most recent CI as assigned by broker.
11	CIOrdID	Y	Unique identifier of replacement CI. Note that this identifier will be used in CIOrdID field of the Cancel Reject message if the replacement request is rejected.
41	OrigCIOrdID	Y	CIOrdID of CI being replaced. If multiple replaces, the previous CI should be referenced.
21	HandInst	Y	Instructions for CI handling. Must match original CI.
18	ExecInst	N	Execution instructions. Must match original CI.
110	MinQty	N	Minimum quantity of a CI to be executed.
55	Symbol	Y	Security Symbol (COS). Must match original CI.
65	SymbolSfx	N	Additional information about the security. Must match original CI.
48	SecurityID	N	Security identifier. Must match original CI.



22	IDSource	N	Identifies class of SecurityID. Must match original CI.
54	Side	Y	Must match original side.
60	TransactTime	Y	Time this CI request was initiated/released by the trader or trading system. UTC Time stamp.
38	OrderQty	Y	Quantity of CI. Can be changed.
40	OrdType	Y	Type of CI. Allowed values: 2 - Limit
44	Price	Y	Price of CI. Can be changed.
47	Rule80A	N	Must match original CI.
6531	ConditionalIndicator	N	Used to indicate that this is a Conditional Indication. Allowed value: 0
StandardTrailer		Y	

#### 4 Responses to Conditional Indication Messages

##### 4.1 Conditional Indication Acknowledgement, Reject, Replacement Confirmation, and Canceled Messages

An execution report message (35=8) is used to:

1. Confirm the receipt of a Conditional Indication (ACK).
2. Confirm changes to an existing Conditional Indication (i.e. accept replace requests).
3. Reject a Conditional Indication.
4. Acknowledge that a Conditional Indication has been canceled.

TAG	FIELD NAME	REQ'D	COMMENTS
StandardHeader		Y	
37	OrderID	Y	Unique identifier as assigned by broker.
11	CIOrdID	N	Unique identifier as assigned by institution.
41	OrigCIOrdID	N	Conditionally required for response to an electronic Cancel or Cancel/Replace request (ExecType=PendingCancel, Replaced, or Canceled). CIOrdID of the previous indication (NOT the initial indication of the day) when canceling or replacing.
76	ExecBroker	N	Used for broker identification. Will always be MSRP.
17	ExecID	Y	Will be unique for each Execution Report message.
20	ExecTransType	Y	Identifies transaction type.
150	ExecType	Y	Describes the type of execution report. Same values as

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			OrdStatus.
39	OrdStatus	Y	<p>Describes the current state of a CHAIN of indications, same scope as OrderQty, CumQty, LeavesQty, and AvgPx</p> <p>0 – indicates a Conditional Indication has been acknowledged.</p> <p>4 – indicates a Conditional Indication has been canceled.</p> <p>5 – indicates the replacement of a Conditional Indication has been accepted.</p> <p>8 – indicates that the request has been rejected.</p> <p>Note: only the first cancel request on a Conditional Indication will be acknowledged. If there are subsequent cancel requests they will be rejected.</p>
55	Symbol	Y	Reflected from Conditional Indication.
65	SymbolSfx	N	Reflected from Conditional Indication.
48	SecurityID	N	Reflected from Conditional Indication.
22	IDSource	N	Reflected from Conditional Indication.
54	Side	Y	Reflected from Conditional Indication.
38	OrderQty	Y	Reflected from Conditional Indication.
40	OrdType	Y	Reflected from Conditional Indication.
44	Price	Y	Reflected from Conditional Indication.
18	ExecInst	N	Reflected from Conditional Indication.
47	Rule80A	N	Reflected from Conditional Indication.
32	LastShares	Y	Will always be zero.
31	LastPx	Y	Will always be zero.
14	CumQty	Y	Will always be zero.
6	AvgPx	Y	Will always be zero.
60	TransactTime	N	Time the transaction represented by this ExecutionReport occurred. UTC Time stamp.
21	HandlInst	N	Reflected from Conditional Indication.
110	MinQty	N	Reflected from Conditional Indication.
	StandardTrailer	Y	

## 4.2 Firm-Up Request

When there is a Conditional Match, the Conditional Indication and the contra-side order or Conditional Indication enter into a firm-up period during which both the Conditional Indication and the contra-side order or Conditional Indication can only be matched in MS RPOOL against each other. A Conditional Match may occur between two Conditional Indications, or between a Conditional Indication and an order that has elected to interact with Conditional Indications. During the firm-up period, MS RPOOL sends Firm-Up Request(s) in response to the Conditional Indication(s).

A Firm-Up Request (35=8) is indicated by an unsolicited cancelation of a Conditional Indication request. The Firm-Up Request will contain a Firm-Up ID which references the Conditional Indication in the Conditional Match and must be used when sending a Firm-Up Order.

TAG	FIELD NAME	REQ'D	COMMENTS
	StandardHeader	Y	
37	OrderID	Y	Unique identifier as assigned by broker.
11	CIOrdID	N	Unique identifier as assigned by institution.
17	ExecID	Y	Will be unique for each Execution Report message.
20	ExecTransType	Y	Identifies transaction type.
150	ExecType	Y	Describes the type of execution report. Will always be value: 4
39	OrdStatus	Y	Used to describe the CI state.  Value of 4 – Indicates that a Conditional Indication has been matched when a Firm-Up ID is placed into tag 14056.
55	Symbol	Y	Reflected from Conditional Indication.
65	SymbolSfx	N	Reflected from Conditional Indication.
48	SecurityID	N	Reflected from Conditional Indication.
22	IDSource	N	Reflected from Conditional Indication.
54	Side	Y	Reflected from Conditional Indication.
38	OrderQty	N	Reflected from Conditional Indication.
40	OrdType	N	Reflected from Conditional Indication.
44	Price	N	Reflected from Conditional Indication.
18	ExecInst	N	Reflected from Conditional Indication.
47	Rule80A	N	Reflected from Conditional Indication.
32	LastShares	Y	Will always be zero.
31	LastPx	Y	Will always be zero.

14	CumQty	Y	Will always be zero.
6	AvgPx	Y	Will always be zero.
60	TransactTime	N	Time the transaction represented by this ExecutionReport occurred. UTC Time stamp.
21	HandlInst	N	Reflected from Conditional Indication.
110	MinQty	N	Reflected from Conditional Indication.
14056	Firm-Up ID	Y	Unique ID to be used for reference on the Firm-Up Order.
StandardTrailer		Y	

## 5 Responses to a Firm-Up Request

Firm-Up Orders can be routed to MS RPOOL in response to a Firm-Up Request. Firm-Up Requests expire in 500 milliseconds.

### 5.1 Firm-Up Order Message

The Firm-Up Order message (35=D) must match all fields of the Firm-Up Request. The quantity of the Firm-Up Order can be lower than the quantity from the Conditional Indication but not greater.

TAG	FIELD NAME	REQ'D	COMMENTS
StandardHeader		Y	
11	ClOrdID	Y	Unique identifier for Firm-Up Order as assigned by institution.
21	HandlInst	Y	Instructions for order handling. Expected Values: 1 or 2
18	ExecInst	N	Execution instructions. Needs to match Conditional Indication.
110	MinQty	N	Minimum quantity of an order to be executed. If present must match or be lower than the MinQty from the Conditional Indication.
55	Symbol	Y	Security Symbol (CQS).
65	SymbolSfx	N	Additional information about the security.
48	SecurityID	N	Security identifier.
22	IDSource	N	Identifies class of SecurityID.
54	Side	Y	Side of order. Must match Conditional Indication. Supported values:  1 – Buy

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			2 – Sell 5 – Sell Short 6 – Sell Short Exempt
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114	LocateReqd	N	Required for short sell orders. Must match Conditional Indication.  Y = Indicates the broker is responsible for locating the stock N = Indicates the broker is not required to locate. <b>If locate with MS is not required then Tag 5700 needs to be populated with validate locate broker.</b>
60	TransactTime	Y	Time this order request was initiated/released by the trader or trading system. UTC time stamp.
38	OrderQty	N	Quantity of this order. Must match or be lower than quantity on the Conditional Indication.
40	OrdType	Y	Order type of this order. Must match Conditional Indication.  Supported Values:  2 – Limit
44	Price	Y	Reflected from Conditional Indication.
59	TimeInForce	Y	Allowed value:  3 – Immediate or Cancel
47	Rule80A (Order Capacity)	N	Capacity of the order. Must be same as on the Conditional Indication.
5700	Locate Broker	N	Conditionally required for short sell orders if tag 114 is N.
14056	FirmUpID	Y	Reflected from Firm-Up Request.
6531	ConditionalIndicator	N	Used to indicate that the order is response to a Firm-Up Request. Supported Values: 1
StandardTrailer		Y	

### 5.2 Firm-Up Request Decline (DK)

The Don't Know message (35=Q) is used to decline a Firm-Up Request.

TAG	FIELD NAME	REQ'D	COMMENTS
StandardHeader		Y	
37	OrderID	Y	Unique identifier as assigned by broker.
17	ExecID	Y	Must be unique for each Execution Report message
127	DKReason	Y	Text explaining the rejection of the Firm-Up Request

55	Symbol	Y	Security Symbol (CQS).
65	SymbolSfx	N	Additional information about the security.
48	SecurityID	N	Security identifier.
22	IDSOURCE	N	Identifies class of SecurityID.
54	Side	Y	Side of order.
32	LastShares	N	Size of the Conditional Indication.
31	LastPx	N	Price of the Conditional Indication.
60	TransactTime	N	Time the transaction represented by this ExecutionReport occurred. UTC Time stamp
StandardTrailer		Y	

## 6 Responses to Firm-Up Order Messages

### 6.1 Execution Report

The execution report message (35=8) is used to:

1. Confirm the receipt of a Firm-Up Order (ACK)
2. Respond to requests for changes to an existing Firm-Up Order
3. Relay fill information on active Firm-Up Orders
4. Reject Firm-Up Orders

TAG	FIELD NAME	REQ'D	COMMENTS
StandardHeader		Y	
37	OrderID	Y	Unique identifier as assigned by broker.
11	ClOrdID	N	Unique identifier for Firm-Up Order as assigned by institution.
76	ExecBroker	N	Used for broker identification. Will always be MSRP.
17	ExecID	Y	Must be unique for each Execution Report message
20	ExecTransType	Y	Identifies transaction type.
19	ExecRefID	N	Required for Cancel and Correct ExecTransType messages.
150	ExecType	Y	Describes the type of execution report. Same values as OrdStatus.
39	OrdStatus	Y	Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx

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			0 – Indicates an order has been acknowledged. 1 – Partially filled 2 - Filled 4 – Indicates the order has been canceled. 8 – Indicates that the request has been rejected.
55	Symbol	Y	Security Symbol (CQS).
65	SymbolSfx	N	Additional information about the security.
48	SecurityID	N	Security identifier.
22	IDSOURCE	N	Identifies class of SecurityID.
54	Side	Y	Side of order. Matches Firm-Up Order.
38	OrderQty	N	Quantity of the order. Matches Firm-Up Order.
40	OrdType	N	Type of the order. Matches Firm-Up Order.
44	Price	N	Matches Firm-Up Order.
59	TimeInForce	Y	Value = 3
18	ExecInst	N	Matches Firm-Up Order.
47	Rule80A	N	Matches Firm-Up Order.
32	LastShares	Y	Shares in this execution.
31	LastPx	N	Price in this execution.
29	LastCapacity	N	Capacity of this execution.
14	CumQty	Y	Cumulative quantity of all executions against this order.
6	AvgPx	Y	Average price of all executions against this order.
60	TransactTime	N	Time the transaction represented by this ExecutionReport occurred. UTC Time stamp.
21	HandlInst	Y	Matches Firm-Up Order.
110	MinQty	N	Matches Firm-Up Order.
StandardTrailer		Y	



## 6.2 Order Status Request

The order status request message (35=H) is used to request an order status message back.

TAG	FIELD NAME	REQ'D	COMMENTS
	StandardHeader	Y	
37	OrderID	N	Unique identifier as assigned by broker.
11	CIOrdID	Y	Unique identifier as assigned by institution.
55	Symbol	Y	Security Symbol (CQS).
65	SymbolSfx	N	Additional information about the security. Matches Firm-Up Order.
48	SecurityID	N	Security identifier
22	IDSsource	N	Identifies class of SecurityID.
54	Side	Y	Side of order.
	StandardTrailer	Y	

## 6.3 Order Cancel Reject

Firm-Up Orders cannot be canceled or changed. If a cancel or replace message is sent for a Firm-Up Order it will be rejected with an order cancel reject message (35=9).

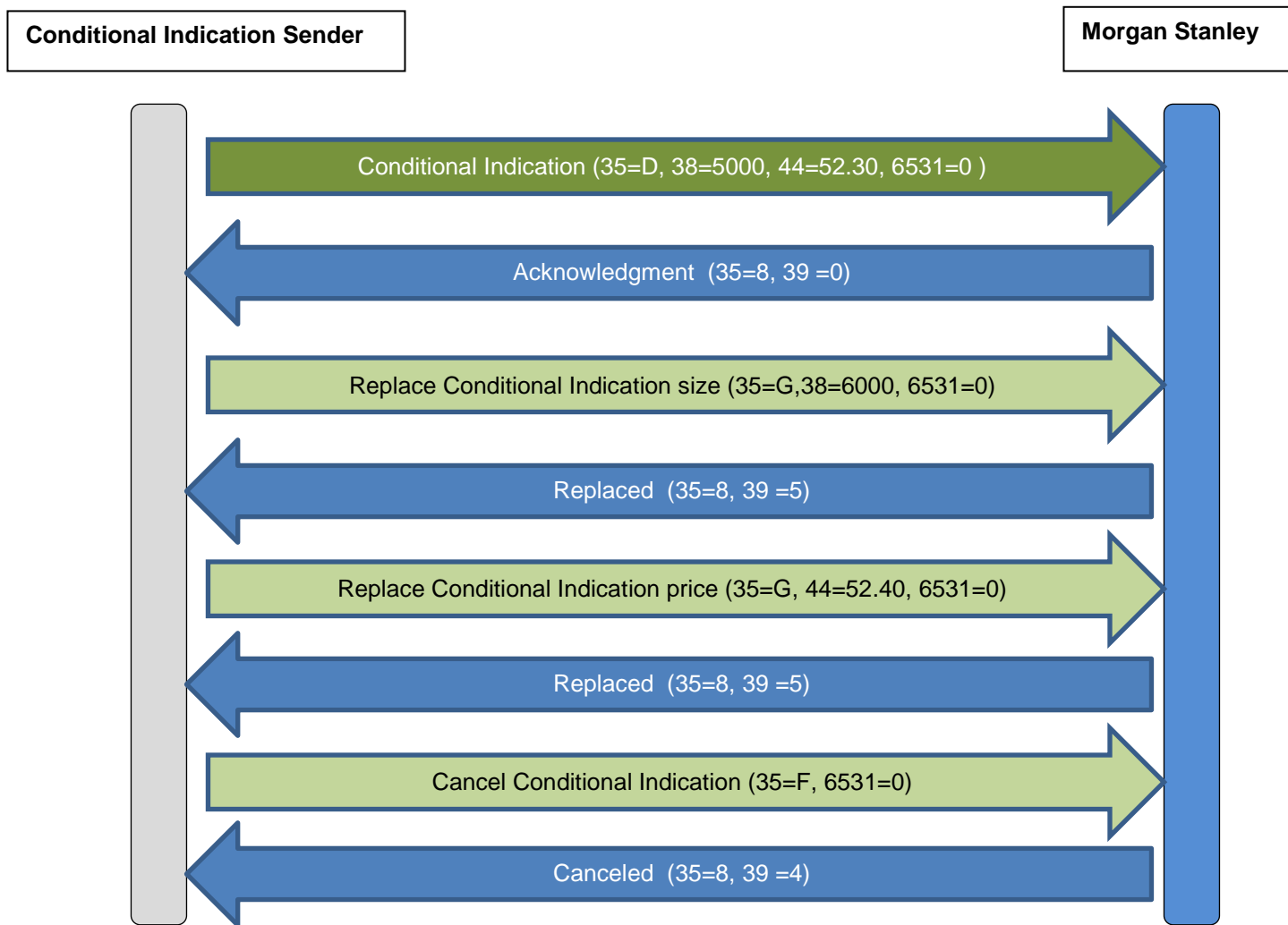
TAG	FIELD NAME	REQ'D	COMMENTS
	StandardHeader	Y	
37	OrderID	Y	Unique identifier as assigned by broker.
11	CIOrdID	Y	Unique identifier for Firm-Up Order as assigned by institution.
41	OrigCIOrdID	Y	CIOrdID which could not be canceled.
39	OrdStatus	Y	Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx
60	TransactTime	N	Time the transaction represented by this ExecutionReport occurred. UTC Time stamp.
58	Text	N	Free format text string.
434	CxlRejResponseTo	Y	Identifies the type of request that the Cancel Reject responds to.
	StandardTrailer	Y	

## 7 Message Sequences

### 7.1 Conditional Indication Entry

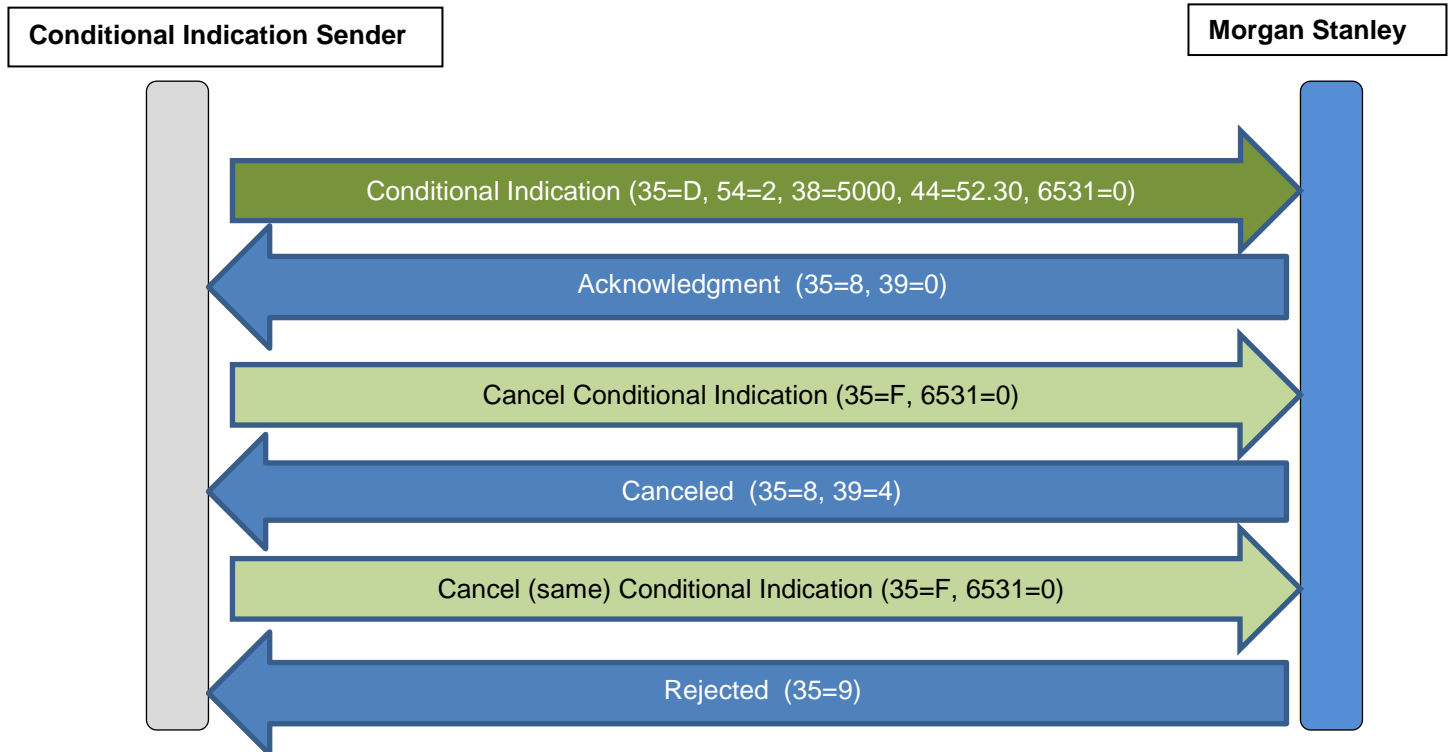
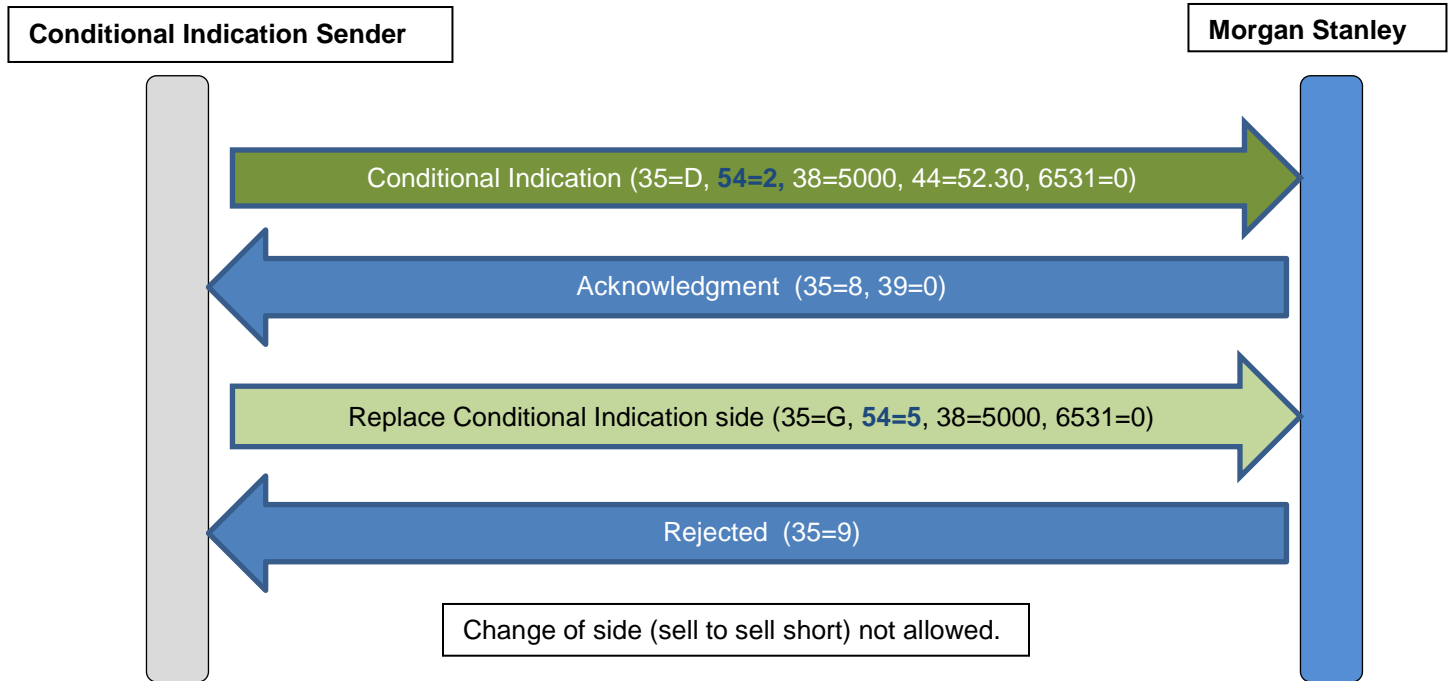
#### 7.1.1 New Conditional Indication, Replacement and Cancel

New Conditional Indications will be acknowledged. Below are examples of what can be changed on a Conditional Indication and the messaging on cancelation.



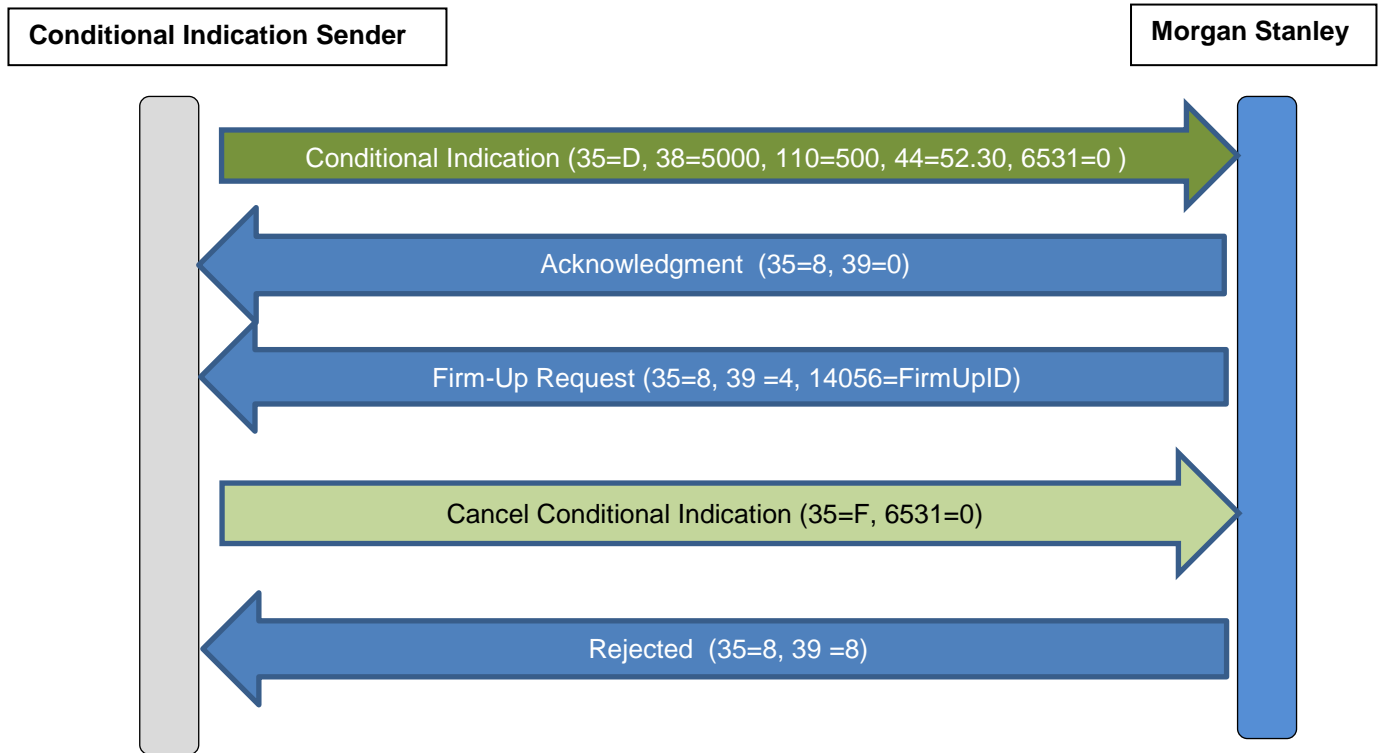
7.1.2 Reject Conditional Indication

Conditional Indications that fail validation will be rejected. Below are some reasons why a Conditional Indication or replacement might be rejected.



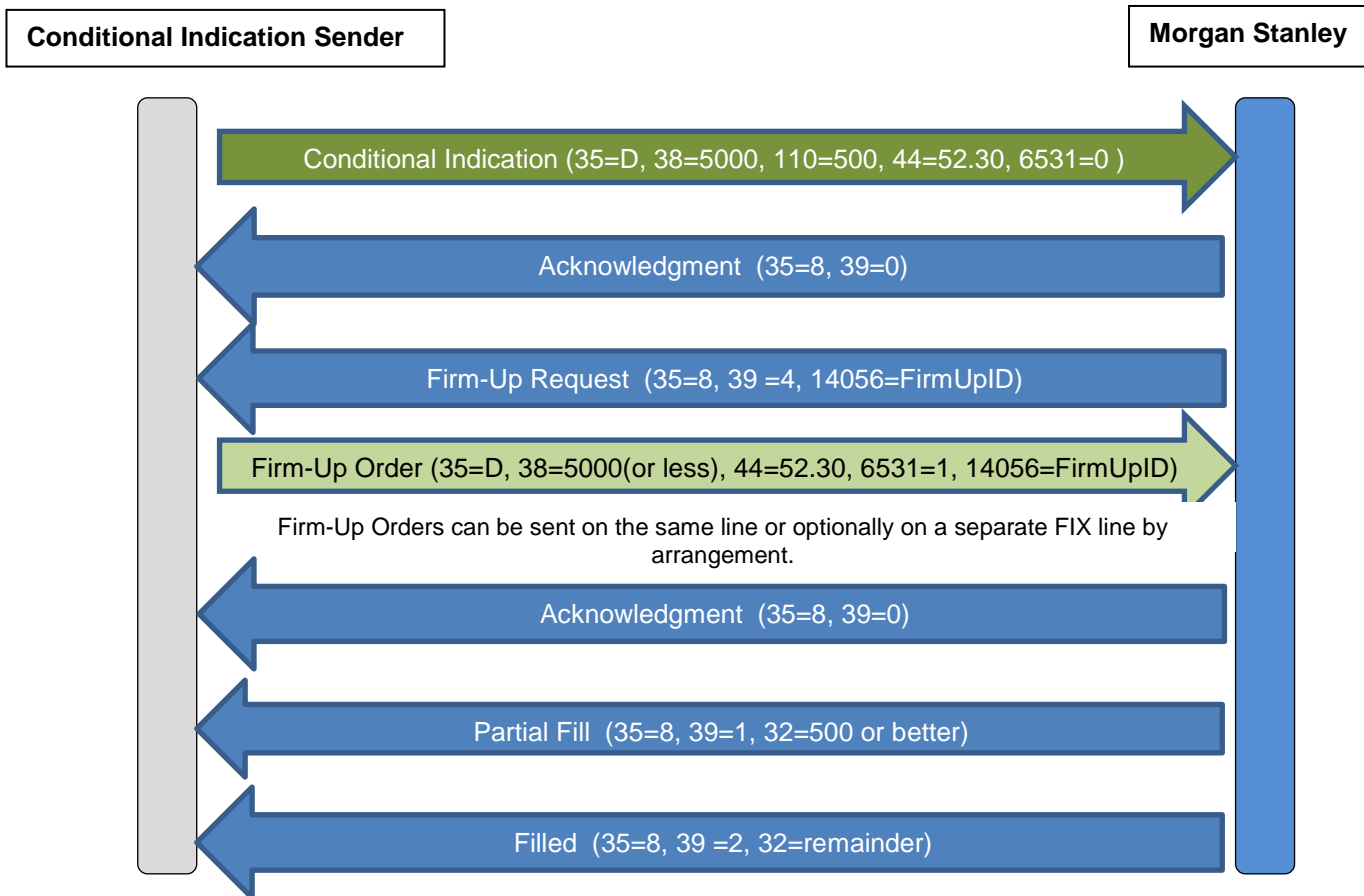
7.1.3 Cancel Request after Firm-Up Request

Any secondary request on a Conditional Indication will be rejected once a Firm-Up Request is issued.



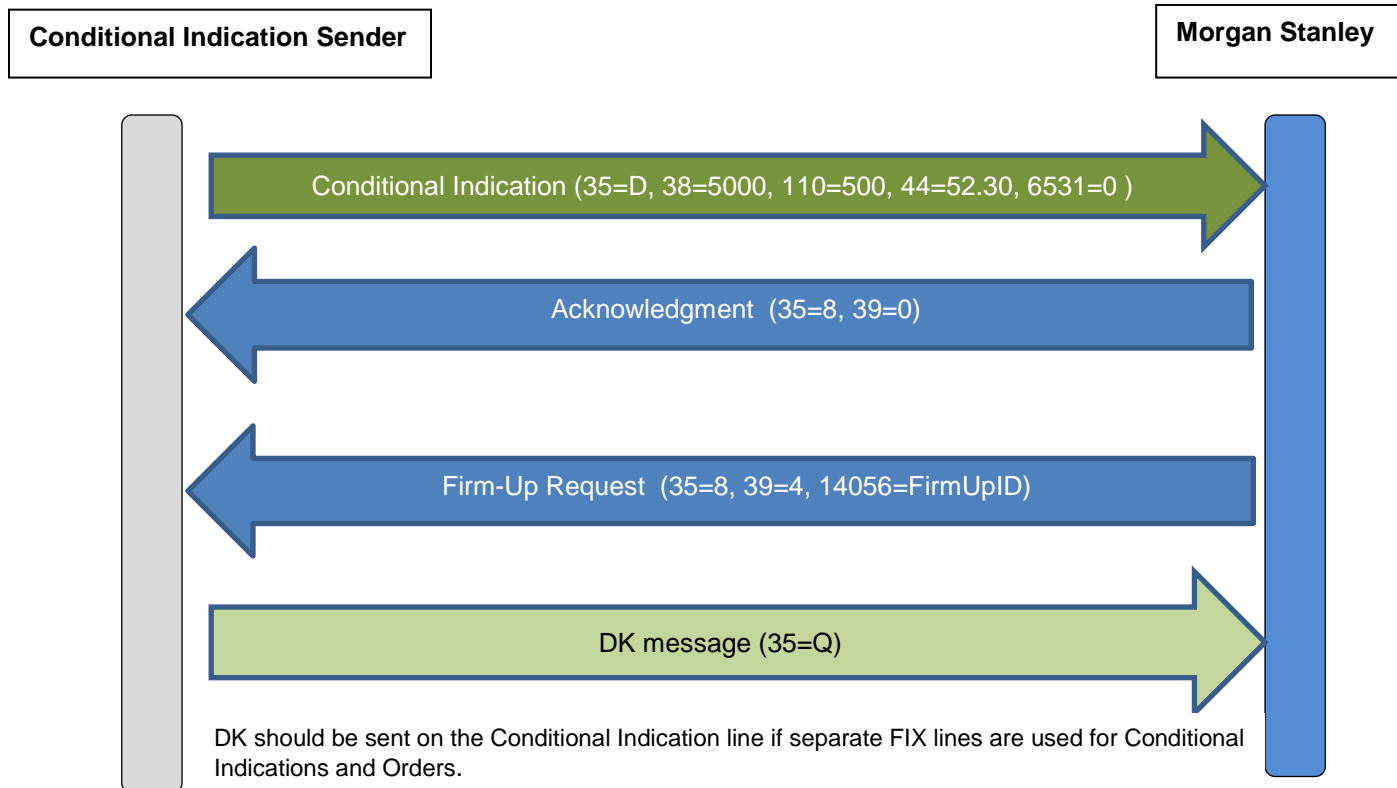
### 7.2 Firm-Up Order Sequence

#### 7.2.1 Successful Conditional Indication and Firm-Up Request sequence with executions



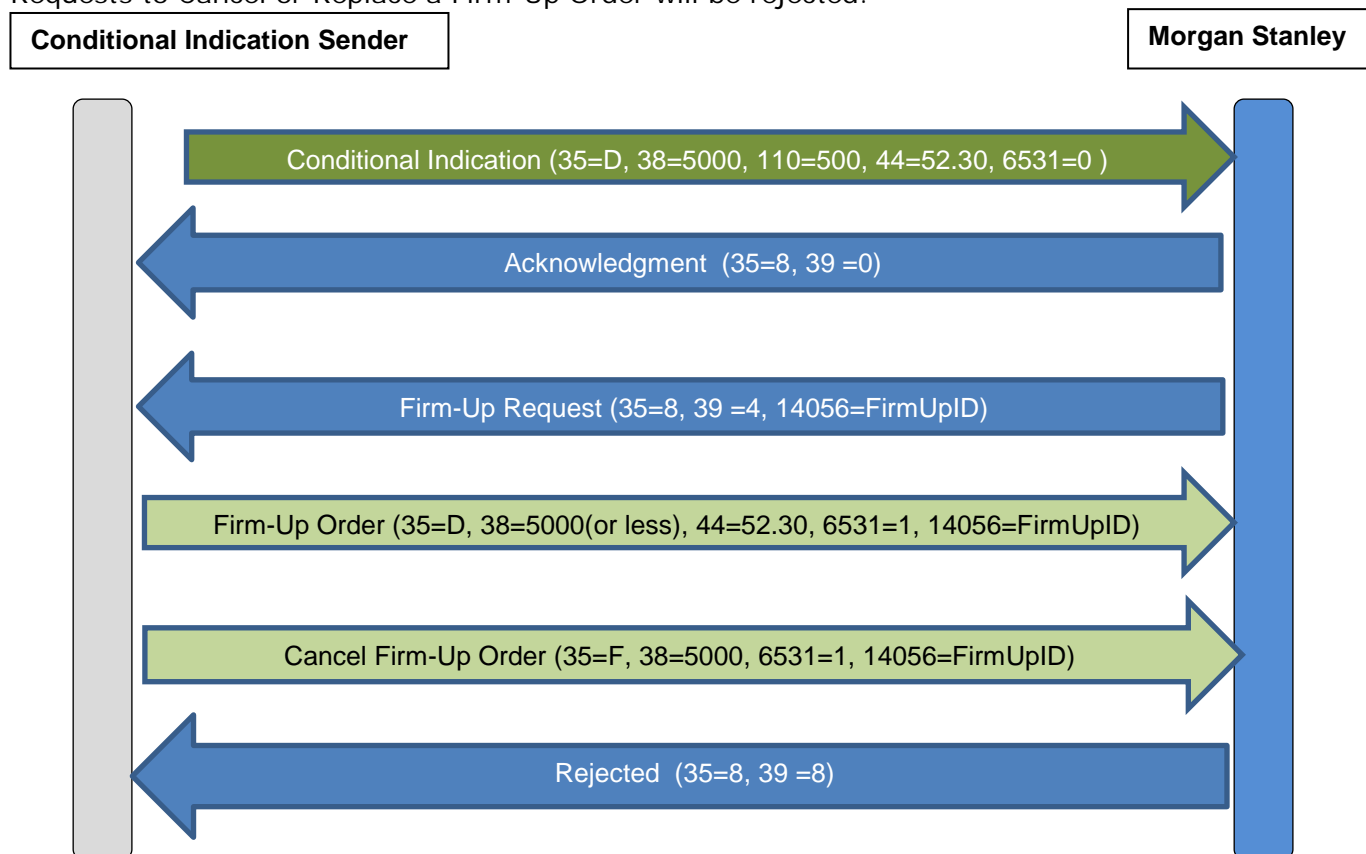
7.2.2 Decline of Firm-Up Request

Message sequence when Conditional Indication sender does not want to accept the Firm-Up Request. The Firm-Up Request will expire in 500 milliseconds, but it is recommended that the Conditional Indication sender explicitly decline the Firm-Up Request if possible. Only one decline will be accepted. Further messages with the same FirmUpID will be rejected.



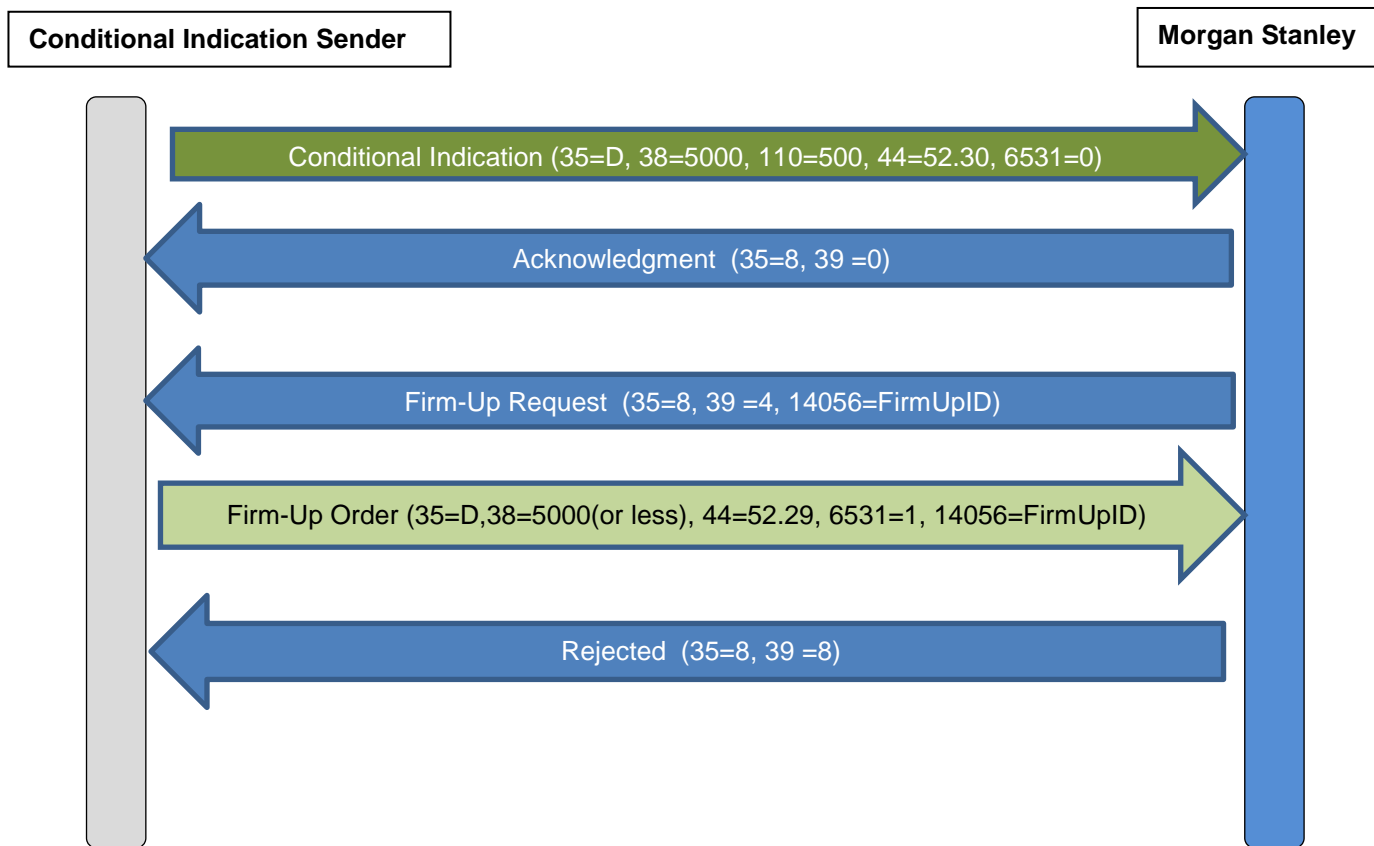
7.2.3 Rejected Firm-Up Order sequences

Requests to Cancel or Replace a Firm-Up Order will be rejected.



7.2.4 Rejected Firm-Up Order sequences

Firm-Up Orders that change certain details from the indication, such as limit price or side, will be rejected.





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