

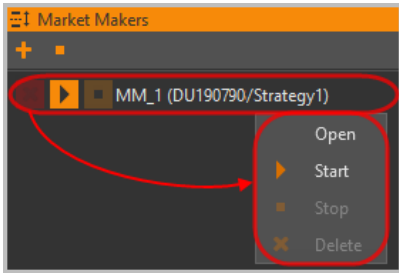
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600

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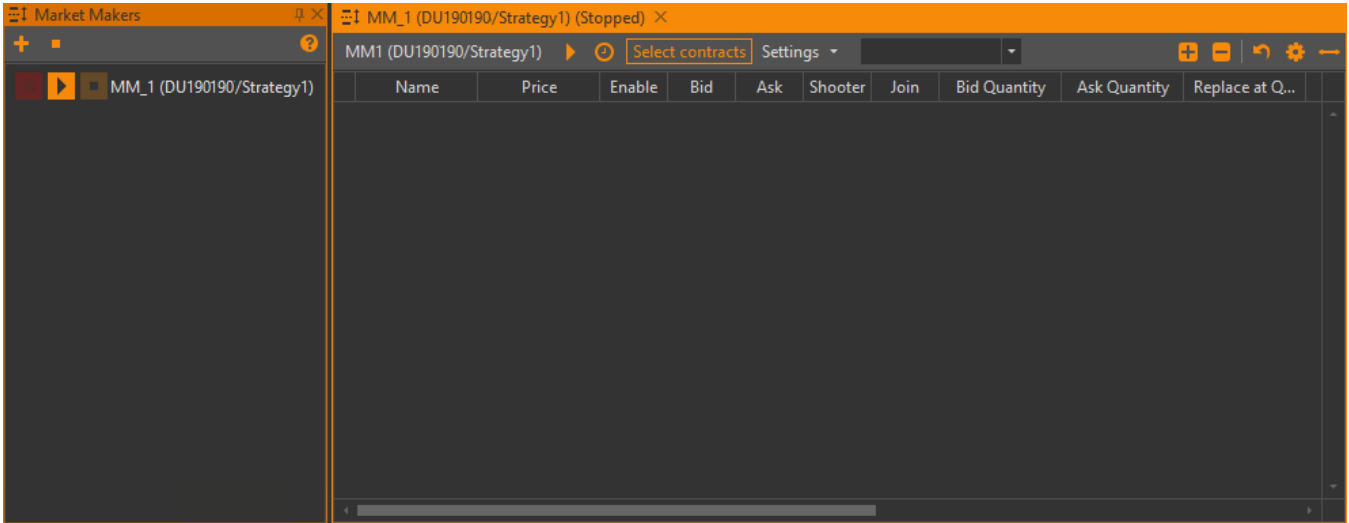
1

6.



2 –

, , **Open.** .

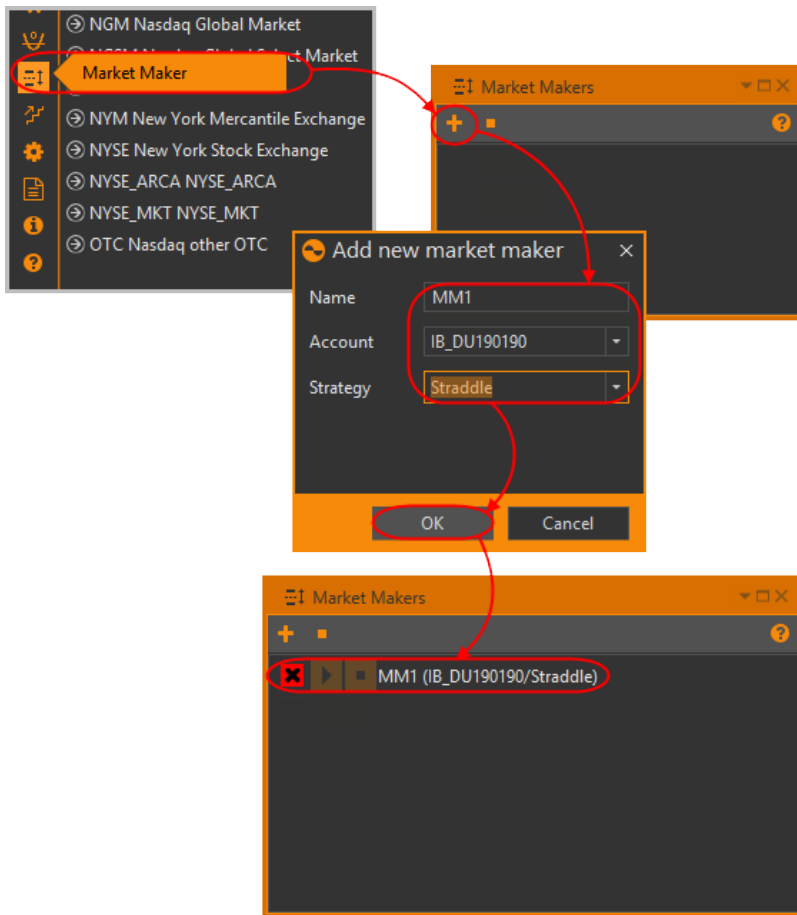


3 –

, , .

-

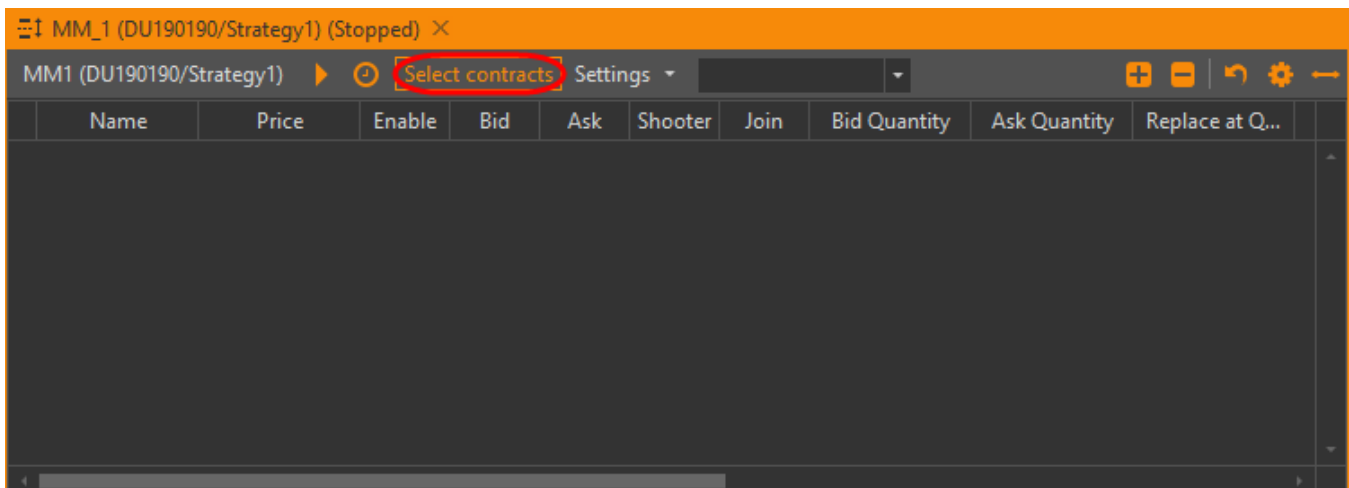
, .



4 –



- /
-
- Select contracts.



(. 6[1]), (. 6[2]), (. 6[3]). , .



The screenshot shows the 'Select instruments' window. The search bar is empty. The list of instruments includes 'BLUE BLUEBIRD BIO INC. COMMON STOC', 'BMRN BIOMARIN PHARMACEUTICAL', 'BNCL BENEFICIAL BANCORP INC. COMMO', 'BOBE BOB EVANS FARMS', 'BOFI BOFI HOLDING', and 'BOJA BOJANGLES INC. COMMON STOCK'. Under 'Options', there is a sub-list of BOJA options. The option 'BOJA 1516J12.5 (CALL 12,5000)' is selected and highlighted with a red circle and a red '1'. To the right of the list, there are two arrows: a right-pointing arrow labeled with a red '2' and a left-pointing arrow. On the far right, there is a table with columns: Instrument, Underlying, Type, and Strike. The table contains several rows of data, including AAPL and BOJA instruments. At the bottom right, there are two buttons: 'OK' and 'Cancel'. The 'OK' button is highlighted with a red circle and labeled with a red '3'.

Instrument	Underlying	Type	Strike
AAOI		Equity	
AAPL		Equity	
AAPL1509V65	AAPL	Option Put	65
AAPL1509J70	AAPL	Option Call	70
AAPL1509J75	AAPL	Option Call	75
AAPL1509V80	AAPL	Option Put	80
AAPL1506W80	AAPL	Option Put	80
AAPL1506W90	AAPL	Option Put	90
BOJA1516V7.5	BOJA	Option Put	7,5
BOJA1516J12.5	BOJA	Option Call	12,5

6 -

	Name	Price	Enable	Bid	Ask	Shooter	Join	Bid Quan...	Ask Qua...	Replace...	Lower Li...	Upper Li...	Bid Spread	Ask Spread	Sensitivity	Shift per...	Curr. Pos.
[-]	AAPL	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	7
[-]	AAPL150...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[+]	AAPL150...	0.0000	[+]	[+]	[+]	[+]	[+]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	AAPL150...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	AAPL150...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	AAPL150...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	AAPL150...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	AAPL150...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	BOJA151...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0
[-]	BOJA151...	0.0000	[-]	[-]	[-]	[-]	[-]	0	0	0	0	0	0p	0p	0p	0p	0

7 -

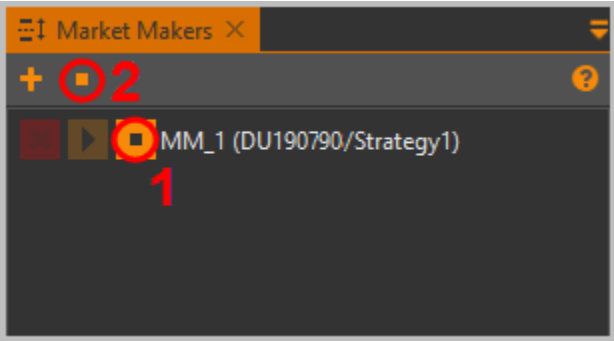
PUT, -CALL, - . (. -).

/ , Open, :

1. : Start/Stop;



2. : (. 8 [1]) **Market Makers.** (. 8 [2]).



8 –

, (. 7). ,  Market Makers.

-

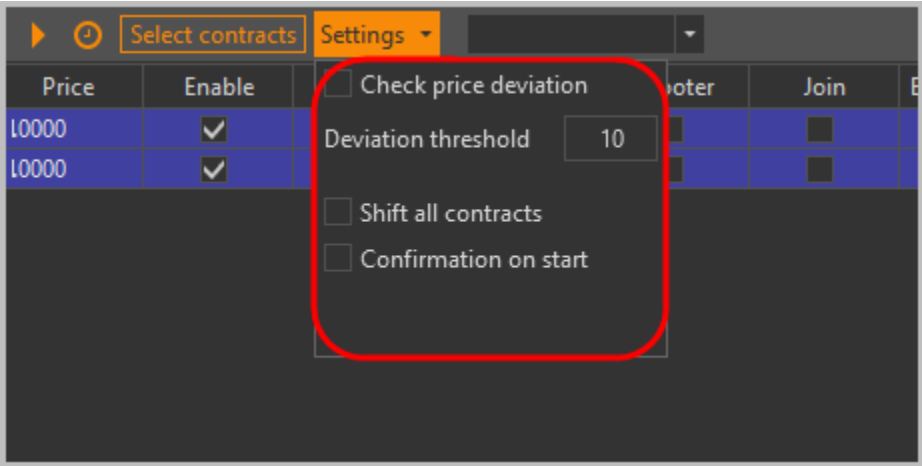
, . . , (. 1).

1 –

Name	
Price	
Enable	, , . Bid / Ask
Bid	
Ask	
Shooter	
Join	
Bid Quantity	. : • (, 1 5); • (, 1d 2.5d). , ()
Ask Quantity	. Bid Quantity
Replace at Quantity	,
Lower Limit	. . "" . : • - = 100, • = 120, • = 30. (100), 20
Upper Limit	. . "" . , • - = 100, • = 80, • = 30. (100), 20

Bid Spread	bid . . : • (, 100p 100); • (, 2v); • (, 10%); • "". (.)
Ask Spread	ask . Bid Spread , , , "" (.)
Sensitivity	. : • (, 100p 100); • (, 2v). , • = 4000, • = 10. 10 (<3990 >4010),
Shift per contract	- . . : • (, 100p 100); • (, 2v). , 5, , : + 5*3.
Curr. Pos.	T

Settings . , Apply changes.



9 –

2 –

Check price deviation	- Deviation threshold,
Deviation threshold	-
Shift all contracts	Shift per contract
Confirmation on start	



MM_1 (DU190790/Strategy1) (Running) X																	
MM1 (DU190790/Strategy1) [Select contracts] Settings																	
Na...	Price	Enable	Bid	Ask	Shooter	Join	Bid Q...	Ask Q...	Repla...	Lower...	Upper...	Bid Sp...	Ask S...	Sensiti...	Shift p...	Curr...	
AAPL...	40.7800	✓	✓	✓	■	✓	10	10	5	-50	50	100p	0p	20p	5p		
My market	40,78	50		Best ask		449,8		Accumulated shift		0p		Cur. joint level		0			
Bid	-59,22	0		Market		40,525	0,003052					Max. joint level		0			
				Best bid		38,85	0,003052										
AAPL...	35.7800	✓	✓	✓	■	■	10	10	7	-50	50	100p	0p	20p	5p		
AAPL...	0.2132	✓	■	✓	■	■	10	10	0	-50	50	2v	0p	20p	5p		
AAPL...	0.0000	✓	✓	✓	■	■	10	10	10	-50	50	150p	0p	20p	5p		
AAPL...	0.5303	✓	✓	✓	■	■	10	10	3	-50	50	3v	0p	20p	5p		

10 –



:

1. bid ask, - ;
 2. ;
 3. **Accumulated shift** (, Shift per contract);
 4. , :
- **Cur. joint level** – ;
 - **Max. joint level** – ;
 - **Cur. upper limit** – bid, ;
 - **Cur. lower limit** – ask, .

11 , call – put .

MM_1 (DU190790/Strategy1) (Running) X																	
MM1 (DU190790/Strategy1) [Select contracts] Settings																	
Na...	Price	Enable	Bid	Ask	Shooter	Join	Bid Q...	Ask Q...	Repla...	Lower...	Upper...	Bid Sp...	Ask S...	Sensiti...	Shift p...	Curr...	
AAPL...	40.7800	✓	✓	✓	■	■	10	10	5	-50	50	100p	0p	20p	5p		
AAPL...	35.7800	✓	✓	✓	■	■	10	10	7	-50	50	100p	0p	20p	5p		
AAPL...	0.2132	✓	■	✓	■	■	10	10	0	-50	50	2v	0p	20p	5p		
AAPL...	0.0000	✓	✓	✓	■	■	10	10	10	-50	50	150p	0p	20p	5p		
AAPL...	0.5303	✓	✓	✓	■	■	10	10	3	-50	50	3v	0p	20p	5p		

11 –

:

1. ask (. 3). sk, **AskQuantity**;

3 –

Spread	Ask	Bid	
--------	-----	-----	--

	$P_{ask} = T + AskSpread + Curr.pos * Shift \text{ per ontract}$	$P_{bid} = T - BidSpread + Curr.Pos * Shift \text{ per ontract}$	• $T -$; • $Ask/BidSpread - (+/ -)$; • $Curr. Pos - (+/ -)$; • $Shift \text{ per ontract} - -$
	$P_{ask/bid} = P_{teor} + Curr.pos * Shift \text{ per ontract}$		• $P_{teor} - Ask / BidSpread (+/ -)$; • $Curr. Pos - (+/ -)$; • $Shift \text{ per ontract} - -$
	$P_{ask} = T + AskSpread * T / 100\% + Curr.pos * Shift \text{ per ontract}$	$P_{bid} = T - BidSpread * T / 100\% + Curr.pos * Shift \text{ per ontract}$	• $-$; • $Ask/BidSpread - \% (+/ -)$ • $Curr. Pos - (+/ -)$; • $Shift \text{ per ontract} - -$

2. bid (.3). bid, BidQuantity;
3. , , ;
4. , :
 - a. Sensitivity;
 - b. Replace at Quantity;
5. .


 (,), . Enable .

:

- (Shooter);
- (Join).

. . Shooter. :

1. ask bid (.) ;
2. P_{ask} Best bid, ask.
Best bid AskQuantity;
3. P_{bid} Best ask, bid.
Best ask BidQuantity;
4. , ;
5. , 2 / 3.


 / , .
 , .

-

. , .


 , 100 put 100 call. . . :

- put call ;
- Upper limit=100;
- Quantity=5.

Join.

MM1 (DU190790/Strategy1) (Running) X																	
MM1 (DU190790/Strategy1) [Select contracts] Settings																	
Na...	Price	Enable	Bid	Ask	Shooter	Join	Bid Q...	Ask Q...	Repla...	Lower...	Upper...	Bid Sp...	Ask S...	Sensiti...	Shift p...	Curr...	
AAPL...	40.7800	✓	✓	✓	✓	✓	10	10	5	-50	50	100p	0p	20p	5p		
AAPL...	35.7800	✓	✓	✓	✓	✓	10	10	7	-50	50	100p	0p	20p	5p		
AAPL...	0.2132	✓	✓	✓	✓	✓	10	10	0	-50	50	2v	0p	20p	5p		
AAPL...	0.0000	✓	✓	✓	✓	✓	10	10	10	-50	50	150p	0p	20p	5p		
AAPL...	0.5303	✓	✓	✓	✓	✓	10	10	3	-50	50	3v	0p	20p	5p		

12 –

:

1. Cur. joint level – .

$L_i = \text{Curr. Pos}/\text{Quantity}, :$

- Curr. Pos – (+/-);
- Quantity – bid ask.

(. 4).

4 – Cur. joint level

	Bid	Ask
Current position 0	+	-
Current position < 0	-	+


, Quantity=5, Curr. pos.=20, Bid, Cur. joint level=4.

2. Max. joint level;

$L_{\max} = \max(L_i)$

3. Bid/Ask Quantity, :

- (Current joint level) (Max joint level);
- (Current joint level).

Lower limit, Upper limit.

, – Cur. upper limit bid, Cur. lower limit ask. , , .

.

, .

, , -. Pricing model. . Option desk .

MM (CQGDDEMOITG158/Straddle)							
Select contracts Settings							
Contract	Price	Enable	Bid	Ask	Shooter	Jo	Pricing Model Option Desk ES M17 (exp 2017-Jun-16) AMR/MARGIN
CME ES FC M...	111.26						Pricing Model Option Desk ES U16 (exp 2016-Sep-16) AMR/MARGIN
Ask			Best ask	112,25	16,29	Accumulated shift	
My market			Market	111,375	16,17		
Bid			Best bid	110,5	16,05		
CME ES FC U...	185.84						
Ask	185,75	199,9	Best ask	20,25	19,34	Accumulated shift	
My market	185,842	200	Market	19,75	18,79	Upper limit is reached	
Bid	185,75	199,9	Best bid	19,25	18,25	Lower limit is reached	
CME ES FC U...	179.03						
Ask	179	200	Best ask	11,5	17,47	Accumulated shift	
My market	179,025	200	Market	11,25	17,18	Upper limit is reached	
Bid	179	200	Best bid	11	16,9	Lower limit is reached	

13 –

-   - / ;
-  - ;
-  - ;
-  - , / ,