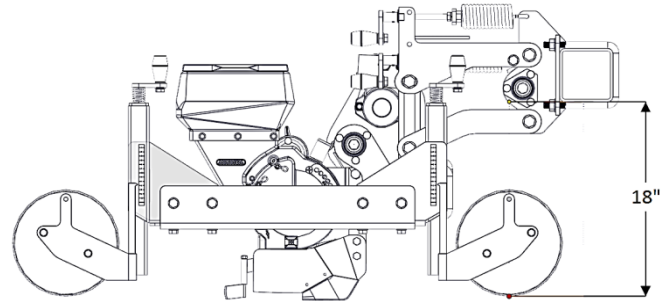
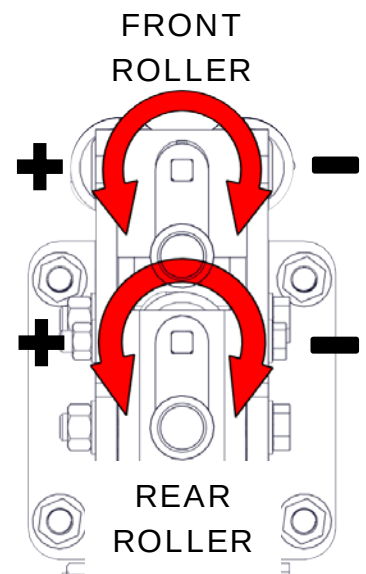
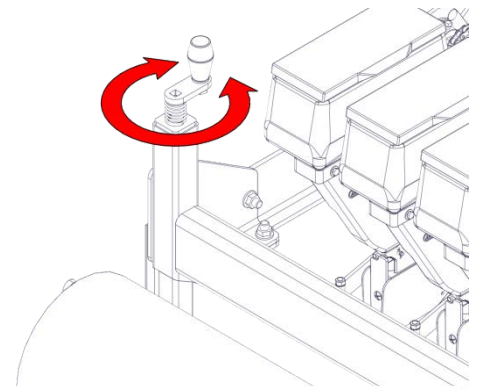
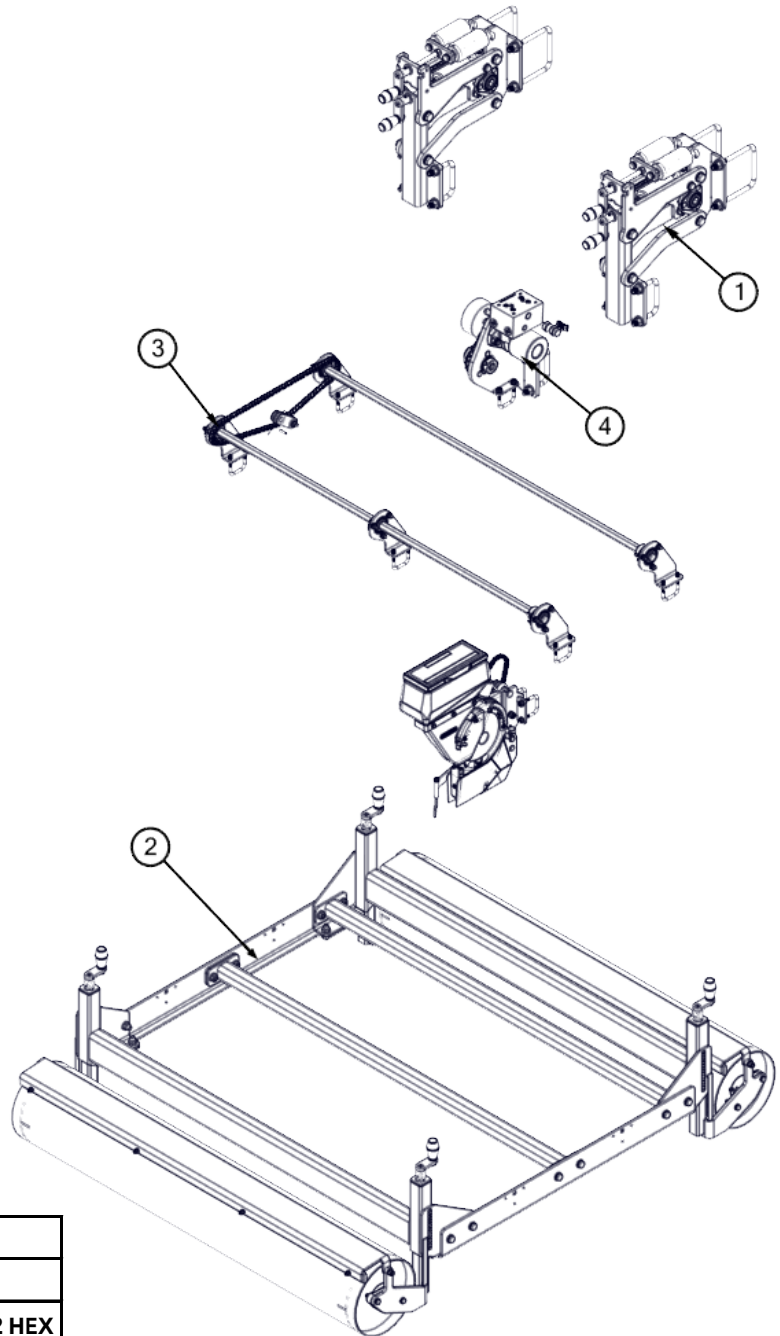


PRODUCT SUPPLEMENT**SUBJECT: MS VERSION M MANUAL SUPPLEMENT****IN FIELD SETUP:**

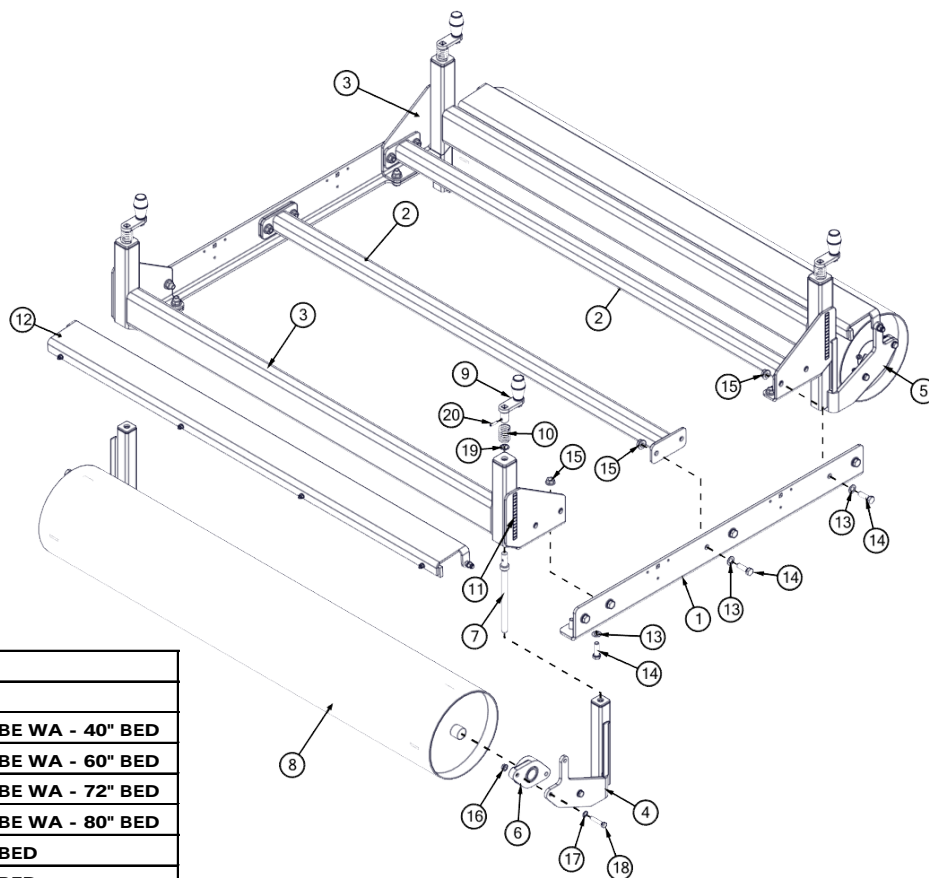
1. Set the seed spacing transmission or hydraulic drive controller to the desired seed spacing or population.
2. Set the initial vacuum and meter settings to the recommended settings for the crop.
3. Check meter singulation.
 - If skips are present: Increase vacuum or Increase singulator (higher number).
 - If doubles are present: Decrease singulator (lower number).
4. Set the toolbar height to 18". This is the distance from the top of the bed to the bottom of the 5x5 toolbar. See figure 1.
5. Increase/decrease front roller weight to move the desired amount of soil. See figure 2.
 - The top handle on the linkage adjusts front roller weight.
 - Turn handle CW to decrease weight on front roller.
 - Turn handle CCW to increase weight on front roller.
 - Monosem recommendation is to push enough soil to smooth the bed top, but not too much to disturb the bed shape.
6. Set seed depth with the crank handles on the four corners of each bed frame. See figure 3.
 - Rotating the crank handle 1-1/2 rotations clockwise will increase the seeding depth 1/8".
 - Depth is factory set to the same position on all four corners.
 - Adjust all four hand cranks on a bed frame the same amount to maintain even planting depth across the bed.
7. Increase/decrease rear roller weight to cover seed. See figure 2.
 - The lower handle on the linkage adjust rear roller weight.
 - Turn handle CW to decrease weight on rear roller.
 - Turn handle CCW to increase weight on rear roller.
8. Verify planter is functioning properly.
 - Check seed spacing.
 - Dig up 11 seeds, measure the distance between them, and divide by 10. This is your average seed spacing.
 - Check for skips and doubles.
 - Check seed depth across the entire bed.

**Figure 1: MS Version M toolbar height.****Figure 2: Linkage adjustment knobs****Figure 3: Depth adjustment knob**

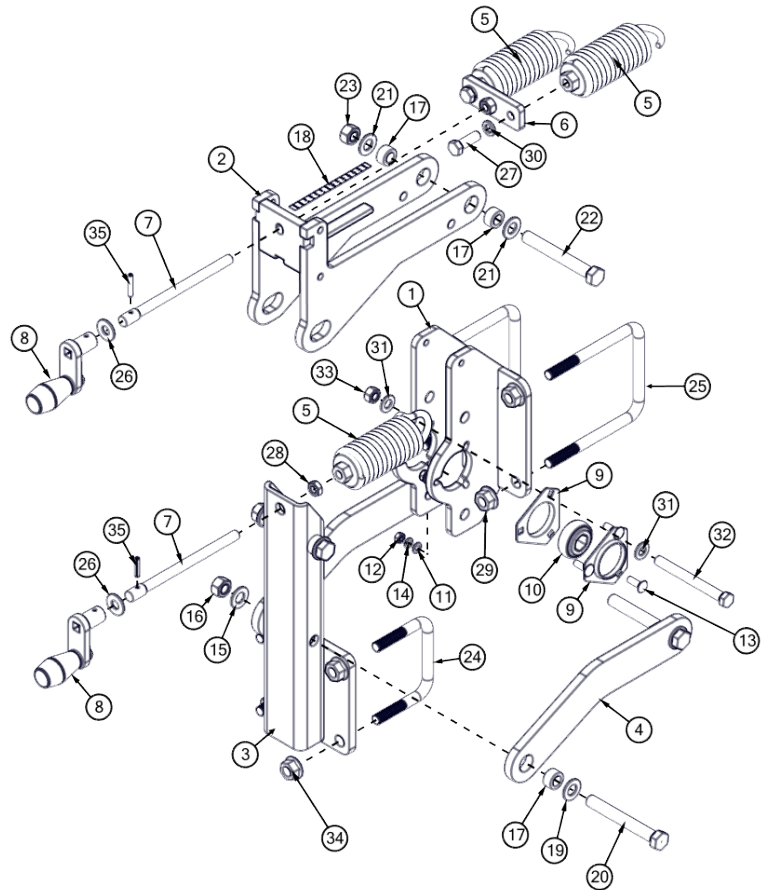
PARTS MANUAL SUPPLEMENT:
COMPLETE BED ASSEMBLY


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	2	100419	PARALLEL LINKAGE ASM.
2	1	100420	40" BED FRAME W/ ROLLER, 2 HEX
		100447	60" BED FRAME W/ ROLLER, 2 HEX
		100611	72" BED FRAME W/ ROLLER, 2 HEX
		100448	80" BED FRAME W/ ROLLER, 2 HEX
3	1	100581	2 HEX, METER CHAIN DRIVE ASM.
4	1	100584	HYD MOTOR ASM, MS VER. M
		100455	MAIN CHAIN DRIVE ASM.

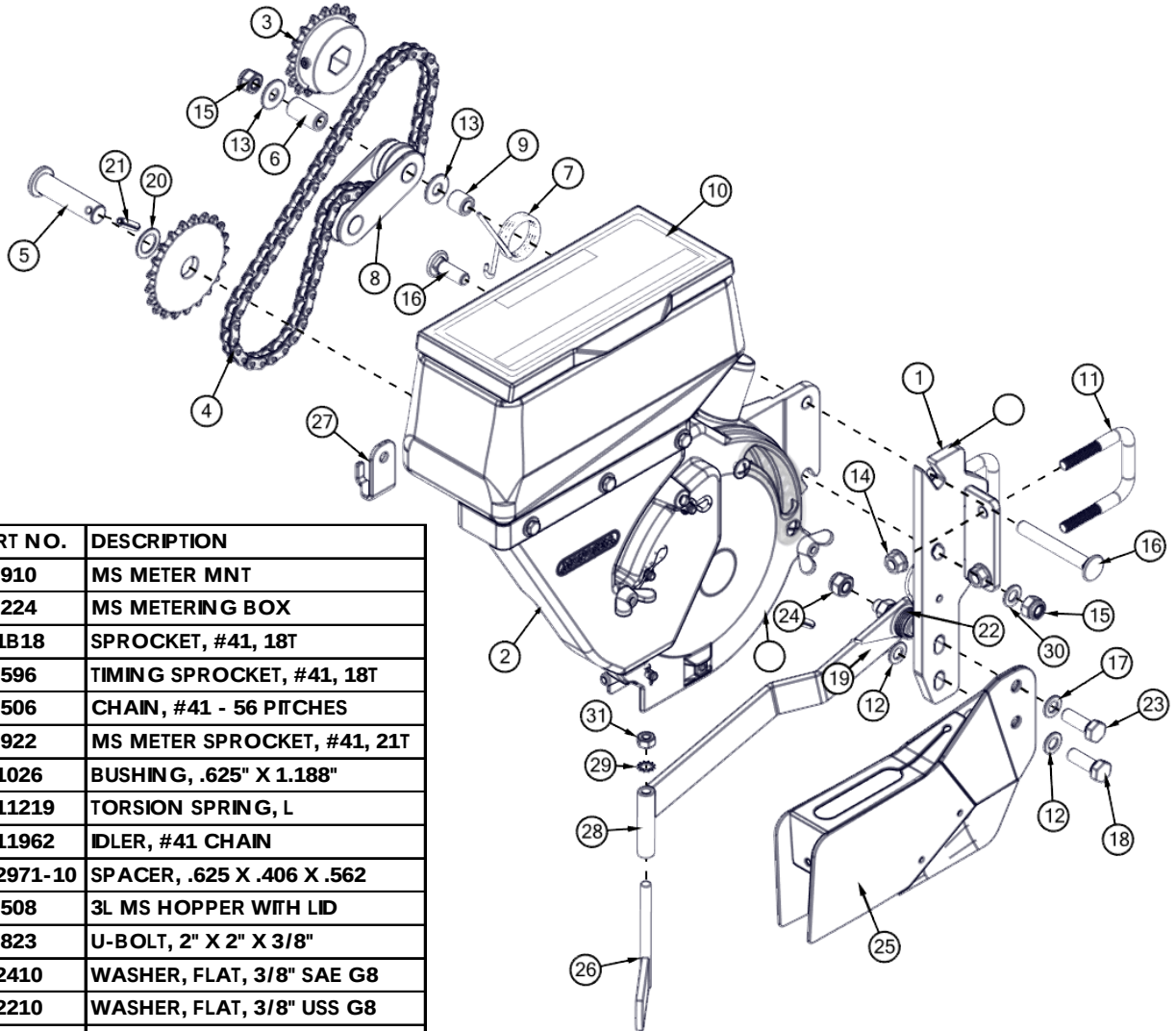
BED FRAME ASSEMBLY



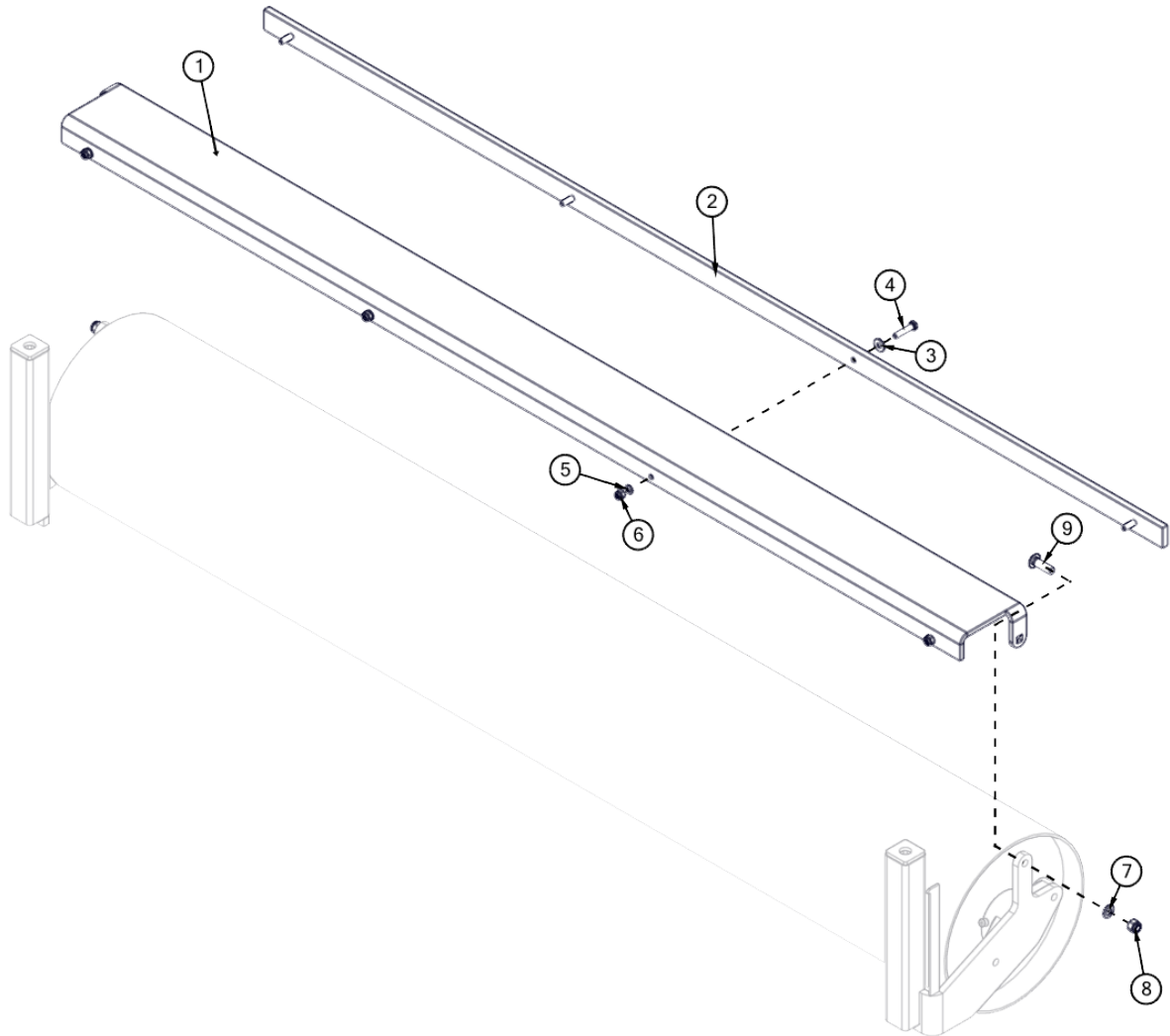
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	2	200908	SIDE RAIL WA. - 2 HEX
2	2	200904	METER MNT CROSS TUBE WA - 40" BED
		200944	METER MNT CROSS TUBE WA - 60" BED
		201110	METER MNT CROSS TUBE WA - 72" BED
		200945	METER MNT CROSS TUBE WA - 80" BED
3	2	200907	DEPTH ADJ. WA. - 40" BED
		200942	DEPTH ADJ. WA. - 60" BED
		201109	DEPTH ADJ. WA. - 72" BED
		200943	DEPTH ADJ. WA. - 80" BED
4	2	200905	ROLLER MNT ARM L WA
5	2	200906	ROLLER MNT ARM R WA
6	4	300136	FLANGED BEARING 1-1/4" ID
7	4	6475	DEPTH ADJUSTMENT SCREW
8	2	200909	BED ROLLER - 40" BED
		200946	BED ROLLER - 60" BED
		201111	BED ROLLER - 72" BED
		200947	BED ROLLER - 80" BED
9	4	100511	HAND CRANK ASM
10	4	301050	COMPRESSION SPRING
11	4	ST014	STICKER SEED DEPTH MS
12	2	100627	ROLLER SCRAPER ASSEMBLY, 40" BED
		100629	ROLLER SCRAPER ASSEMBLY, 60" BED
		100613	ROLLER SCRAPER ASSEMBLY, 72" BED
		100543	ROLLER SCRAPER ASSEMBLY, 80" BED
13	20	W-4410	WASHER, FLAT, 1/2" SAE G8
14	20	H-4120	BOLT, HEX, 1/2"-13 X 1-1/2" G8
15	20	N-4201	NUT, SER. FLANGE, 1/2"-13
16	8	N-2301	NUT, SER. FLANGE, 3/8"-16
17	8	W-2410	WASHER, FLAT, 3/8" SAE G8
18	8	H-3130	BOLT, HEX, 3/8"-16 X 1-3/4" G8
19	4	10622024	WASHER, FLAT, 16.5 X 26 X 1
20	4	10172090	ROLL PIN, 6 X 25mm

LINKAGE ASSEMBLY (100419)


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	200901	CLAMPFACE WA
2	1	200902	TOP LINKAGE WA
3	1	200903	REAR LINKAGE ADAPTER
4	2	803532	PLATE, BOTTOM LINKAGE
5	3	KA2068	HD SPRING
6	1	800309	SPRING PLATE WA
7	2	803683	SHAFT, SPRING ADJUST
8	2	100511	HAND CRANK ASM
9	2	300596	FLANGETTE
10	1	300597	BEARING, 7/8" HEX
11	3	W-1410	WASHER, FLAT, 5/16" SAE G8
12	3	N-1300	NUT, HEX, 5/16"-18, G5
13	3	CB-1110	BOLT, CARR., 5/16"-18 X 1.00, G5
14	3	W-1610	WASHER, SPLIT, 5/16", G8
15	2	W-5410	WASHER, FLAT, 5/8" SAE G8
16	2	N-5301	NUT, HEX, CL, 5/8"-11
17	8	L71505214	BUSHING, 1"
18	1	ST014	STICKER SEED DEPTH MS
19	2	W-5410	WASHER, FLAT, 5/8" SAE G8
20	2	H-5501	BOLT, HEX, 5/8"-11 X 5" G8
21	4	W-5410	WASHER, FLAT, 5/8" SAE G8
22	2	H-5501	BOLT, HEX, 5/8"-11 X 5" G8
23	2	N-5301	NUT, HEX, CL, 5/8"-11
24	2	300822	U-BOLT, 4 X 2 X 5/8"-11
25	2	4502.SS	U-BOLT, 5 X 5 X 5/8"-11
26	2	W-4210	WASHER, FLAT, 1/2" USS G8
27	2	H-4120	BOLT, HEX, 1/2"-13 X 1-1/2" G8
28	1	N-4501	NUT, HEX, JAM, 1/2"-13
29	4	N-5401	NUT, FLANGE, 5/8"-11
30	2	W-4610	WASHER, SPLIT, 1/2", G8
31	2	W-4410	WASHER, FLAT, 1/2" SAE G8
32	1	H-4501	BOLT, HEX, 1/2"-13 X 5" G8
33	1	N-4301	NUT, HEX, CL, 1/2"-13
34	4	N-5401	NUT, FLANGE, 5/8"-11
35	2	1017209	ROLL PIN, 6 X 3

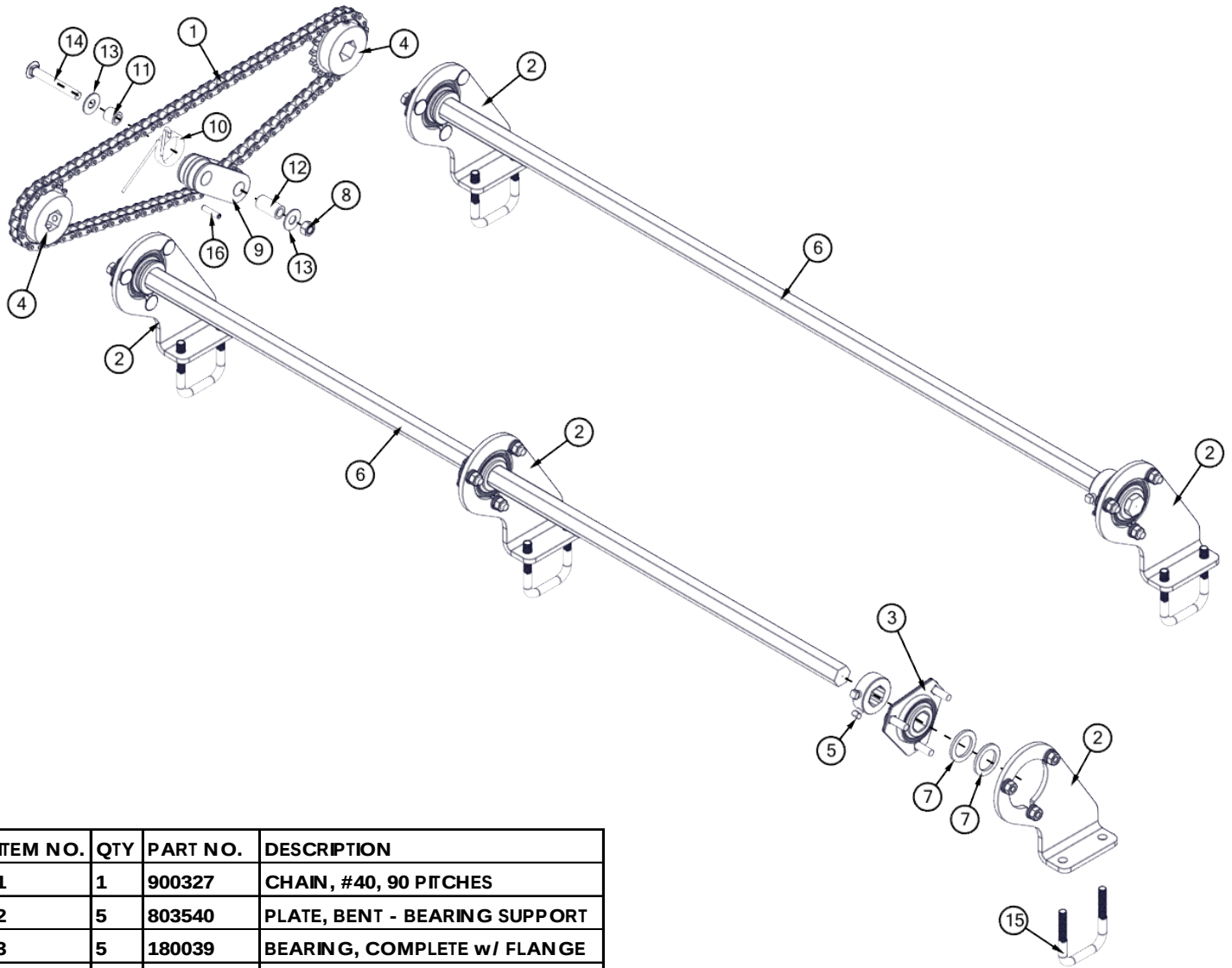
METER ASSEMBLY (100421)


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	200910	MS METER MNT
2	1	653224	MS METERING BOX
3	1	G41B18	SPROCKET, #41, 18T
		100596	TIMING SPROCKET, #41, 18T
4	1	300506	CHAIN, #41 - 56 PITCHES
5	1	200922	MS METER SPROCKET, #41, 21T
6	1	KD1026	BUSHING, .625" X 1.188"
7	1	KD11219	TORSION SPRING, L
8	1	KD11962	IDLER, #41 CHAIN
9	1	KD2971-10	SPACER, .625 X .406 X .562
10	1	643508	3L MS HOPPER WITH LID
11	2	300823	U-BOLT, 2" X 2" X 3/8"
12	2	W-2410	WASHER, FLAT, 3/8" SAE G8
13	2	W-2210	WASHER, FLAT, 3/8" USS G8
14	4	N-2301	NUT, SER. FLANGE, 3/8"-16
15	2	NM-21015	NUT, NYLOCK, 10mm, G8.8
16	2	CBM-310	CARR. BOLT, 10 X
17	1	W-2410	WASHER, FLAT, 3/8" SAE G8
18	1	HM-41030	HEX, BOLT, 10 X 30, G8.8
19	1	NM-21015	NUT, NYLOCK, 10mm, G8.8
20	1	10622024	WASHER, FLAT, 16.5 X 26 X 1
21	1	10172090	ROLL PIN, 6 X 25mm
22	1	W-2410	WASHER, FLAT, 3/8" SAE G8
23	1	HM-41030	HEX, BOLT, 10 X 30, G8.8
24	1	NM-21015	NUT, NYLOCK, 10mm, G8.8
25	1	65010053	SHOE, MS STD POINT
26	1	6573	HILLER BLADE
27	1	803681	PLATE, HILLER HOOK
28	1	6570.A	LEFT HARD HILLER, MS - D
29	1	10629009	WASHER, ET LOCK, 8mm
30	1	W-2410	WASHER, FLAT, 3/8" SAE G8
31	1	NM-1801	NUT, HEX, 8mm, G8.8

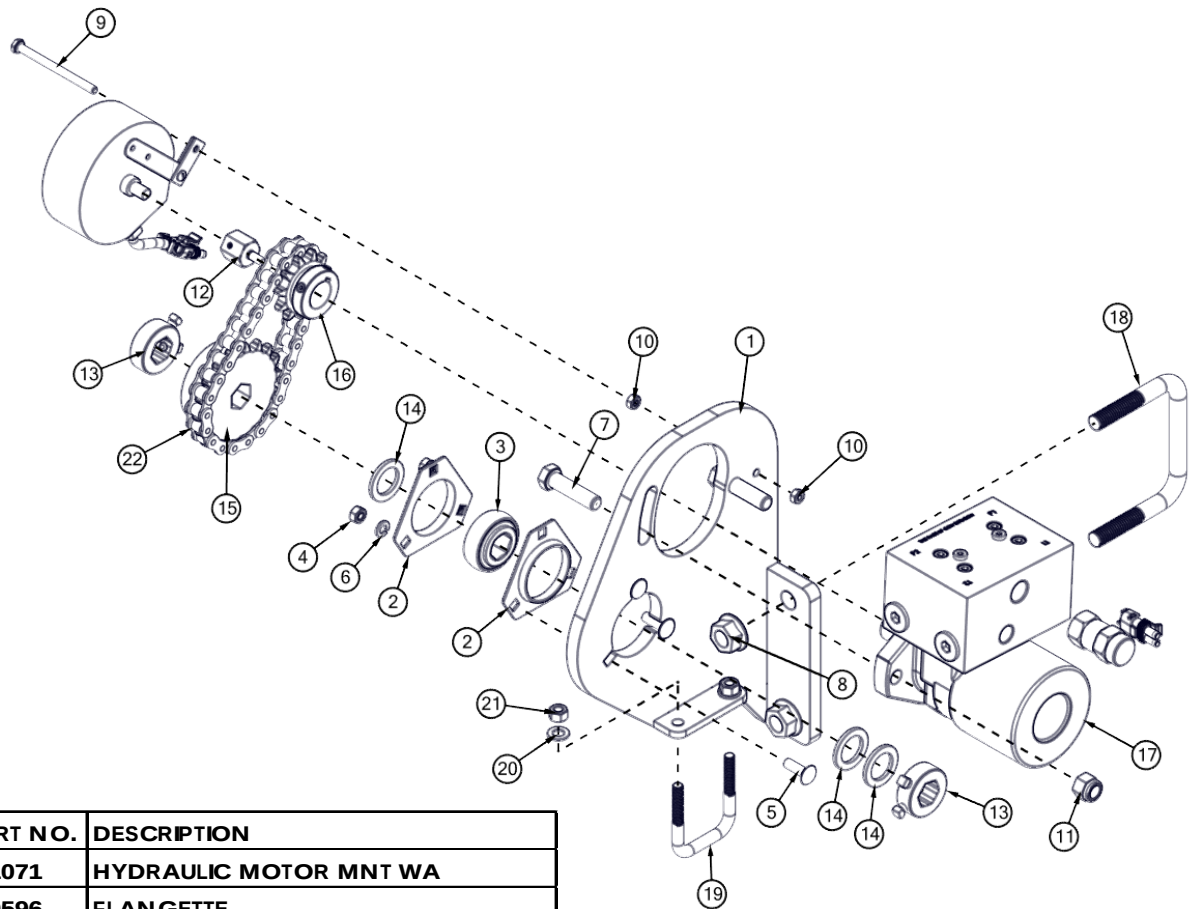
SCRAPER ASSEMBLY


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	804172	FORMED PLATE, SCRAPER - 40" BED
		804174	FORMED PLATE, SCRAPER - 60" BED
		804146	FORMED PLATE, SCRAPER - 63" BED
		804148	FORMED PLATE, SCRAPER - 72" BED
		804047	FORMED PLATE, SCRAPER - 80" BED
2	1	804173	UHMW, 1.25 X 24.75 X .375 - 40" BED
		804175	UHMW, 1.25 X 44.75 X .375 - 60" BED
		804147	UHMW, 1.25 X 47.25 X .375 - 63" BED
		804149	UHMW, 1.25 X 47.25 X .375 - 72" BED
		804048	UHMW, 1.25 X 64.25 X .375 - 80" BED
3	4	W-0210	WASHER, FLAT, 1/4" USS G8
4	4	H-1110	BOLT, HEX, 1/4"-20 X 1-1/4" G5
5	4	W-0410	WASHER, FLAT, 1/4" SAE G8
6	4	N-0610	NUT, NYLOCK 1/4"-20
7	2	W-2410	WASHER, FLAT, 3/8" SAE G8
8	2	N-2101	NUT, NYLOCK 3/8"-16 G8
9	2	CB-2214	BOLT, CARR., 3/8"-16 X 1.25, G5

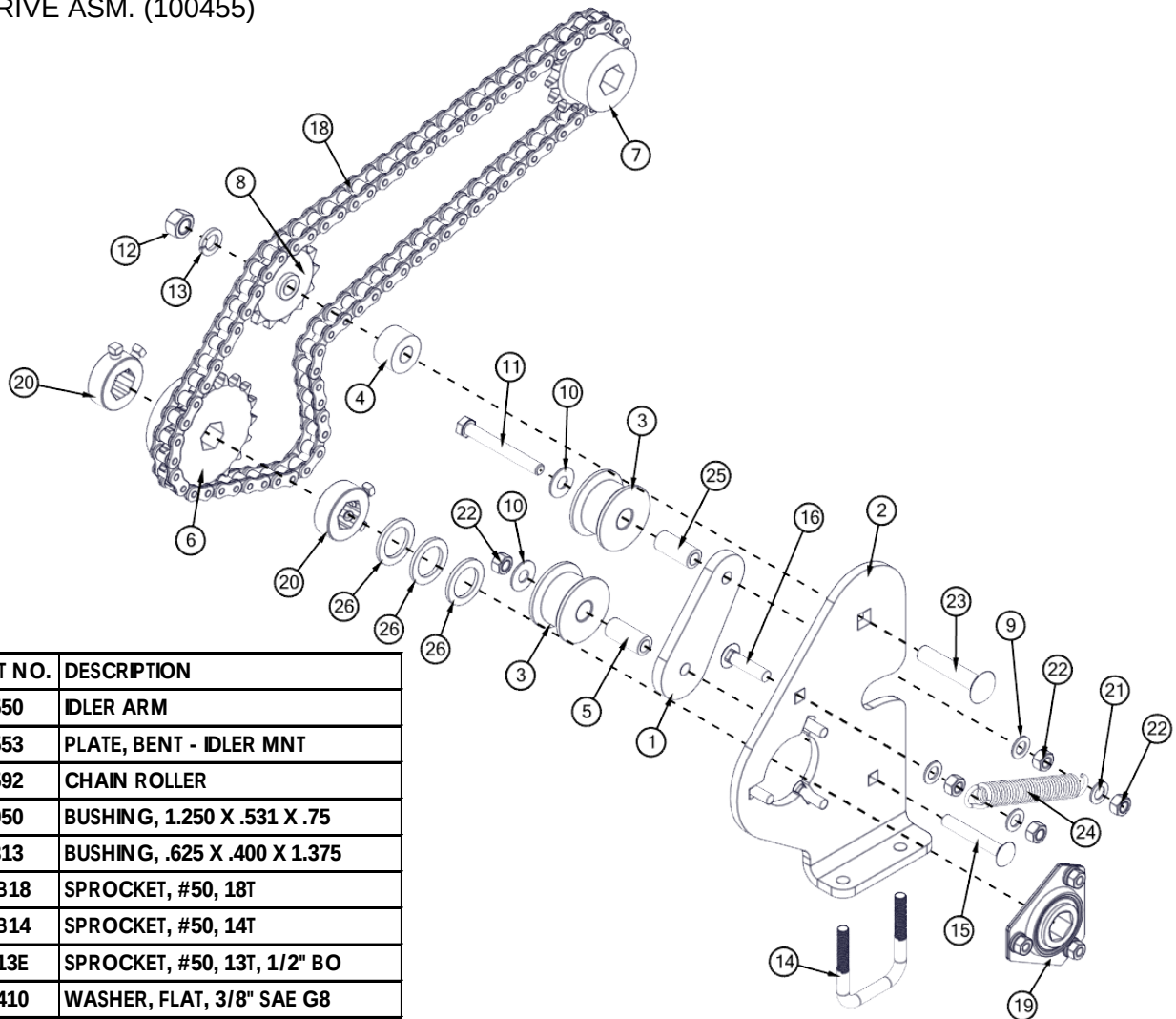
HEX SHAFT ASSEMBLY (100581)



ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	900327	CHAIN, #40, 90 PITCHES
2	5	803540	PLATE, BENT - BEARING SUPPORT
3	5	180039	BEARING, COMPLETE w/ FLANGE
4	2	G40B18	SPROCKET, #40, 18T
		100596	TIMING SPROCKET, #41, 18T
5	2	100288	HEX STOP
6	2	640556	7/8 HEX SHAFT
7	8	K10233	BUSHING, 1.50 X 1.00 X .125
8	1	N-2300	NUT, HEX, CL, 3/8"-16
9	1	KD11962	IDLER, #41 CHAIN
10	1	KD11219	TORSION SPRING, L
11	1	KD2971-10	SPACER, .625 X .406 X .562
12	1	KD1026	BUSHING, .625" X 1.188"
13	2	W-2210	WASHER, FLAT, 3/8" USS G8
14	1	CB-2275	BOLT, CARR., 3/8"-16 X 2.75, G5
15	5	300823	U-BOLT, 2" X 2" X 3/8"
16	1	10172090	ROLL PIN, 6 X 25mm

HYDRAULIC DRIVE ASSEMBLY (100584)


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	201071	HYDRAULIC MOTOR MNT WA
2	2	300596	FLANGETTE
3	1	300597	BEARING, 7/8" HEX
4	3	N-1300	NUT, HEX, 5/16"-18, G5
5	3	CB-1110	BOLT, CARR., 5/16"-18 X 1.00, G5
6	3	W-1610	WASHER, SPLIT, 5/16", G8
7	2	H-4201	BOLT, HEX, 1/2"-13 X 2" G8
8	2	N-5401	NUT, FLANGE, 5/8"-11
9	1	H-1350	BOLT, HEX, 1/4"-20 X 3-1/2" G5
10	2	N-0605	NUT, HEX, 1/4"-20, G8
11	2	N-4101	NUT, NYLOCK 1/2"-13 G8
12	1	100263	COUPLER ASM, DJ APT RATE SENSOR
13	2	100288	HEX STOP
14	3	K10233	BUSHING, 1.50 X 1.00 X .125
15	1	G50B18	SPROCKET, #50, 18T
16	1	G50BS11	SPROCKET, 1"ID, 11T #50
17	1	INT1925	HYDRAULIC MOTOR
18	1	300822	U-BOLT, 4 X 2 X 5/8"-11
19	1	300823	U-BOLT, 2" X 2" X 3/8"
20	2	W-2410	WASHER, FLAT, 3/8" SAE G8
21	2	N-2001	NUT, HEX, 3/8"-16, G8
22	1	301051	CHAIN #50, 28 PITCHES

MAIN CHAIN DRIVE ASM. (100455)


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	803550	IDLER ARM
2	1	803553	PLATE, BENT - IDLER MNT
3	2	300592	CHAIN ROLLER
4	1	801950	BUSHING, 1.250 X .531 X .75
5	1	803313	BUSHING, .625 X .400 X 1.375
6	1	G50B18	SPROCKET, #50, 18T
7	1	G50B14	SPROCKET, #50, 14T
8	1	G5013E	SPROCKET, #50, 13T, 1/2" BO
9	1	W-2410	WASHER, FLAT, 3/8" SAE G8
10	2	W-2210	WASHER, FLAT, 3/8" USS G8
11	1	H-3309	BOLT, HEX, 3/8"-16 X 3" G5
12	1	N-4001	NUT, HEX, 1/2"-13, G8
13	1	W-4610	WASHER, SPLIT, 1/2", G8
14	1	300823	U-BOLT, 2" X 2" X 3/8"
15	1	CB-2231	BOLT, CARR., 3/8"-16 X 2.50, G5
16	1	CB-2221	BOLT, CARR., 3/8"-16 X 1.50, G5
17	1	W-2410	WASHER, FLAT, 3/8" SAE G8
18	1	300500	CHAIN, #50, 76 PITCHES
19	1	180039	BEARING, COMPLETE w/ FLANGE
20	2	100288	HEX STOP
21	2	W-2410	WASHER, FLAT, 3/8" SAE G8
22	5	N-2300	NUT, HEX, CL, 3/8"-16
23	1	CB-4425	BOLT, CARR., 1/2"-13 X 2.50, G5
24	1	300930	SPRING, EXTENSION - 5.25"
25	1	803313	BUSHING, .625 X .400 X 1.375
26	3	K10233	BUSHING, 1.50 X 1.00 X .125

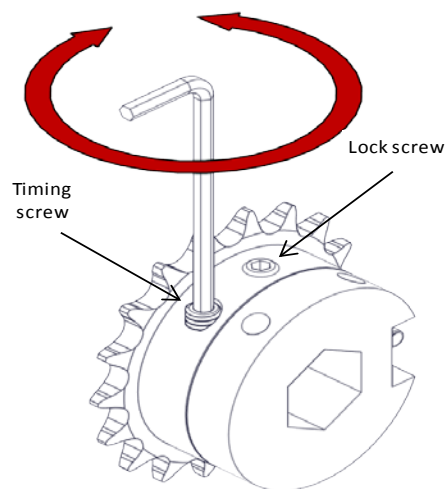
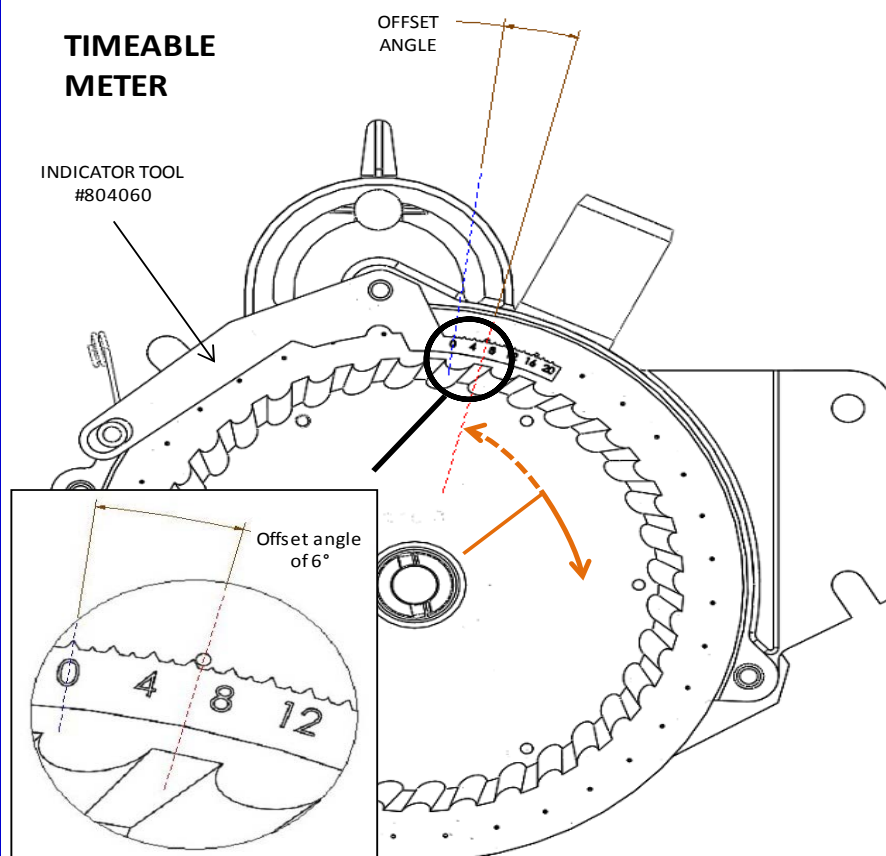
MONOSEM Inc. 1001 Blake st. Edwardsville, KS 66111 913.438.1700 913.438.5455 (fax)	Description: MS v M Sync chart and setting instruction for timing staggered meters			
	Part No.: 550078			
	REV	Description	ECN	Date
	A	Schematic release	E00523	11/12/2015

TIMING INSTRUCTIONS

1. Install the timing indicator #804060 on the meter that is being timed.
2. Turn the main hex shaft until all the slack is removed from the drive chains and the center of a disc hole is aligned with the end of the singulator on the meter without the timing sprocket.
3. Locate the required offset angle, on the chart below, base off the disc hole number and desire seed spacing.
4. Loosen the locking set screws on the timing sprocket.
5. Rotate the meter disc CCW to remove any slack while adjust the timing set screw on the timing sprocket until the back of a disc hole matches the offset angle on the indicator (CW to decrease angle & CCW to increase angle).
6. Tighten the locking set screws on the timing meter and replace the timing indicator with the original singulator.

Seed disc holes	Chart below displays the offset angle required based off seed spacing and disc hole number																											
	Seed spacing																											
	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	
18	15	6	13	7.1	13	12	8	0.9	12	0.8	8.6	15	1.3	11	19	5.5	11	15	19	2.7	5.6	8.2	11	13	15	16	18	
30	9	3.6	8	4.3	7.5	7.3	4.8	0.5	7	0.5	5.1	9.2	0.8	6.7	11	3.3	6.5	9.2	12	1.6	3.4	4.9	6.3	7.6	8.7	9.7	11	
36	7.5	3	6.7	3.6	6.3	6.1	4	0.5	5.8	0.4	4.3	7.7	0.6	5.6	9.5	2.7	5.4	7.7	9.6	1.3	2.8	4.1	5.3	6.3	7.3	8.1	8.9	
60	4.5	1.8	4	2.1	3.8	3.7	2.4	0.3	3.5	0.2	2.6	4.6	0.4	3.3	5.7	1.6	3.3	4.6	5.8	0.8	1.7	2.5	3.2	3.8	4.4	4.9	5.3	
72	3.8	1.5	3.3	1.8	3.1	3.1	2	0.2	2.9	0.2	2.1	3.8	0.3	2.8	4.8	1.4	2.7	3.8	4.8	0.7	1.4	2.1	2.6	3.2	3.6	4	4.4	
120	2.3	0.9	2	1.1	1.9	1.8	1.2	0.1	1.8	0.1	1.3	2.3	0.2	1.7	2.9	0.8	1.6	2.3	2.9	0.4	0.8	1.2	1.6	1.9	2.2	2.4	2.7	

TIMEABLE METER



Timing sprocket # 100596