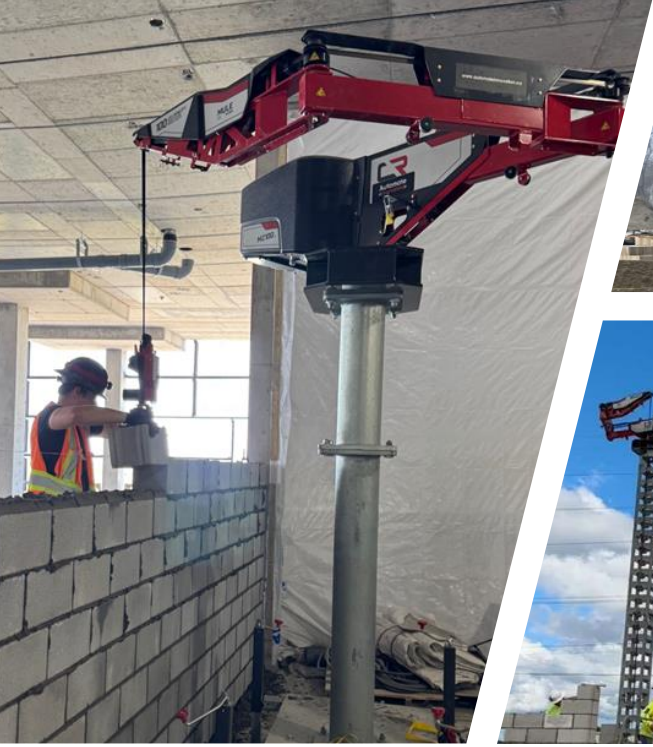
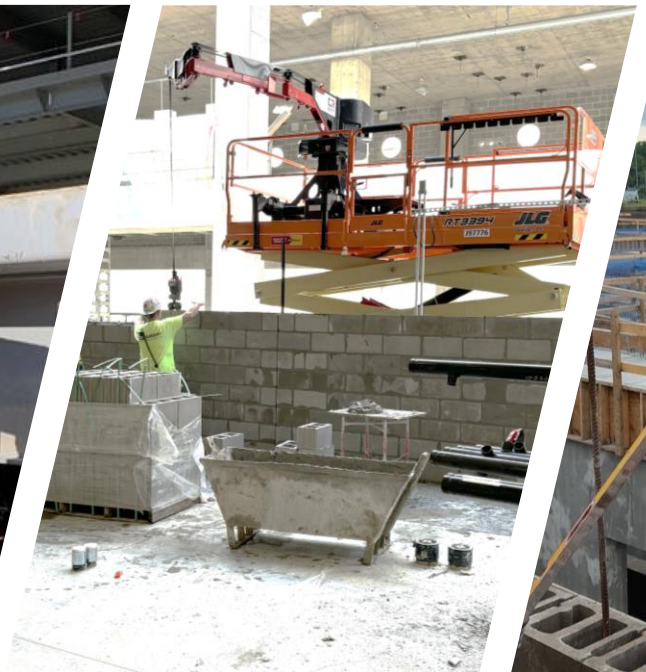
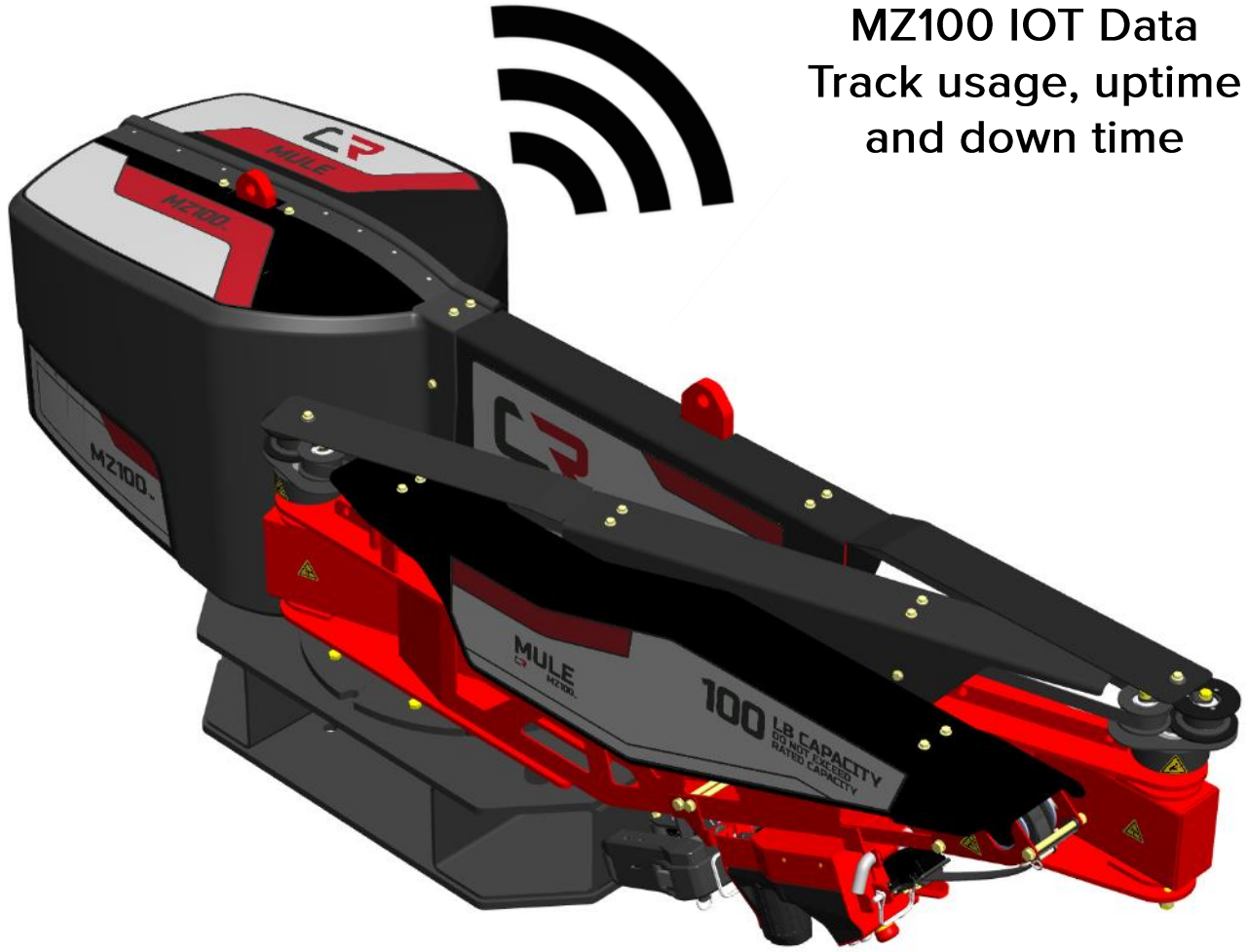




MZ100 OVERVIEW

CONSTRUCTION ROBOTICS™
BUILD SMART

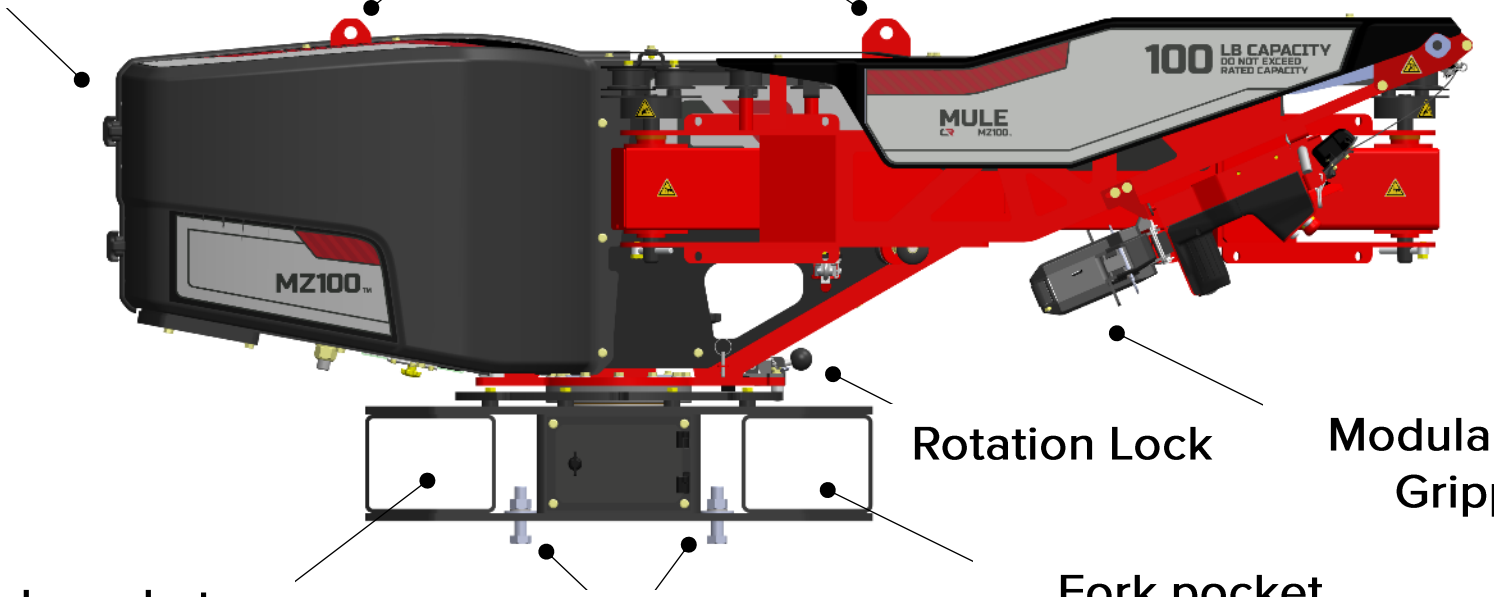
	MZ100
Machine Weight	809 lb. / 367 kg
Lifting Capacity	100 lb. / 45 kg
Reach Radius	12 ft. / 3.65 m
Vertical Travel / Reach	20 ft. / 6.09 m
Head Height Clearance	2 ft. 2 in. / 0.66 m
Height	2 ft. 7 in. / 0.78 m
Width	1 ft. 10 in. / 0.81 m
Length	14 ft 7 in / 3.83 m
Stowed Length	6 ft. 11 in. / 2.10 m
Stowed Width	2 ft. 4 in. / 0.71 m
Power	Battery / 120V AC

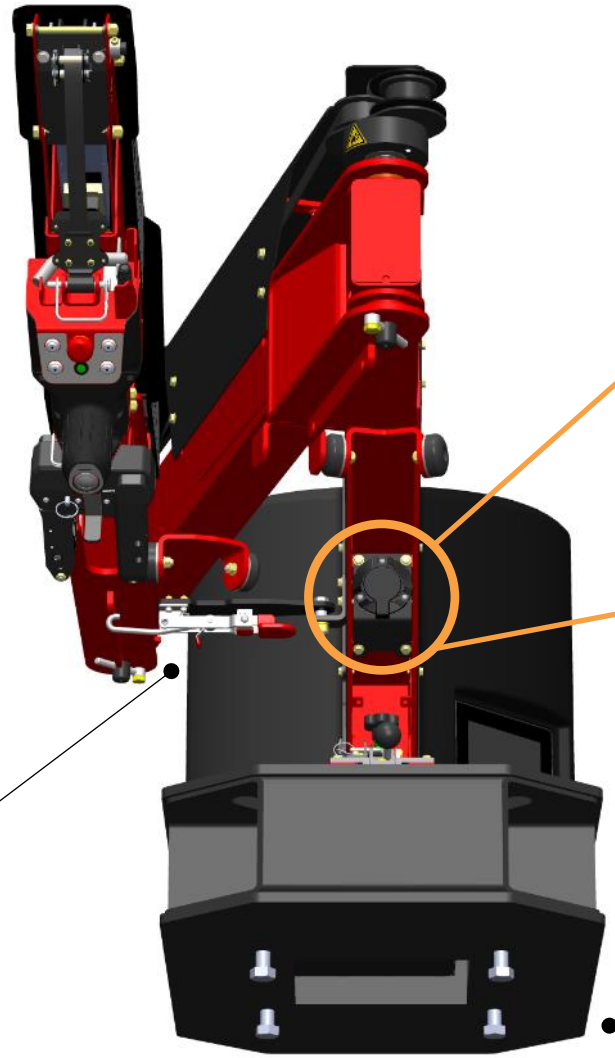


MZ100 IOT Data
Track usage, uptime and down time

Lithium ion Battery. ~32 hours of operation per charge. 3.5 hrs for full charge

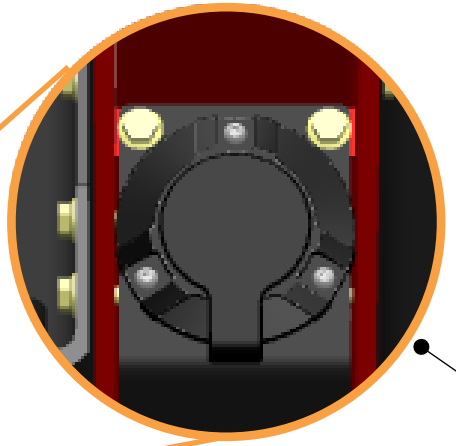
MZ100 as shown weighs 809 lbs (367 kg)





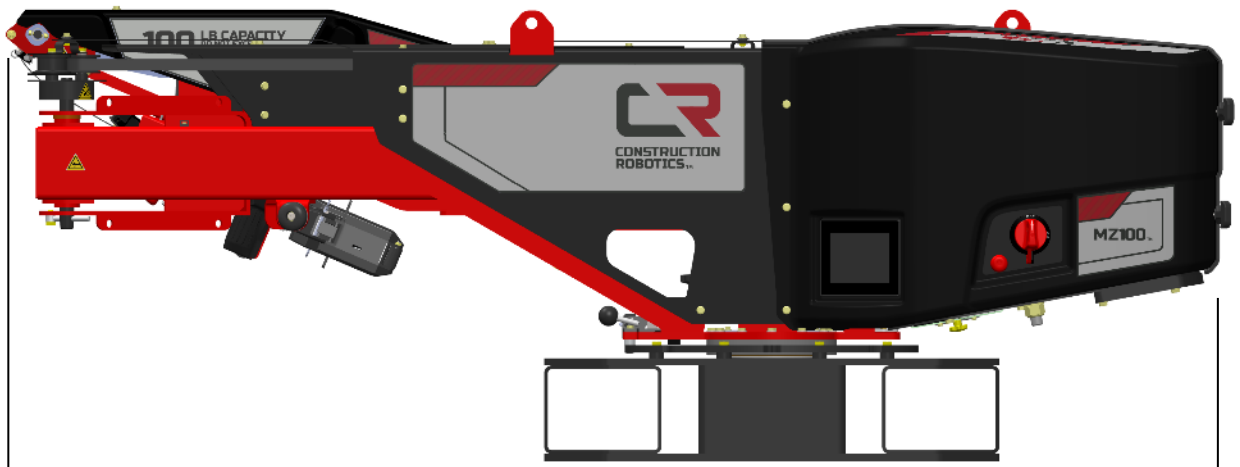
Handle and gripper storage

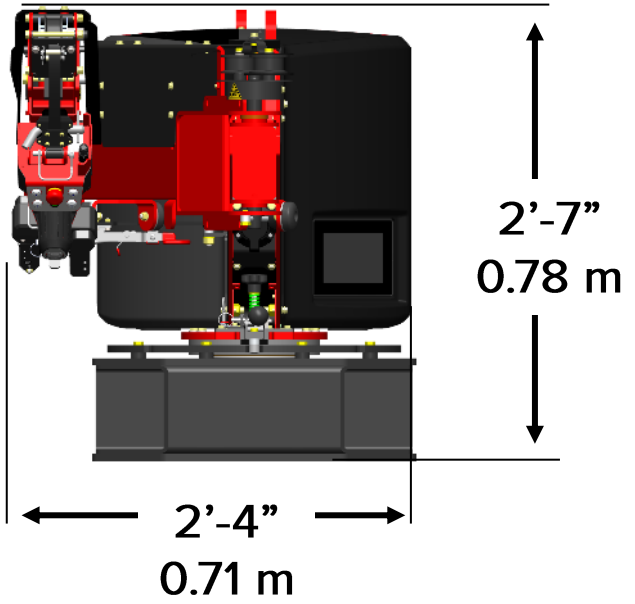
Arm lock for transport and storage



Charging port. 110 plug. Generators or house power.

Mounting points (shown with bolts in)

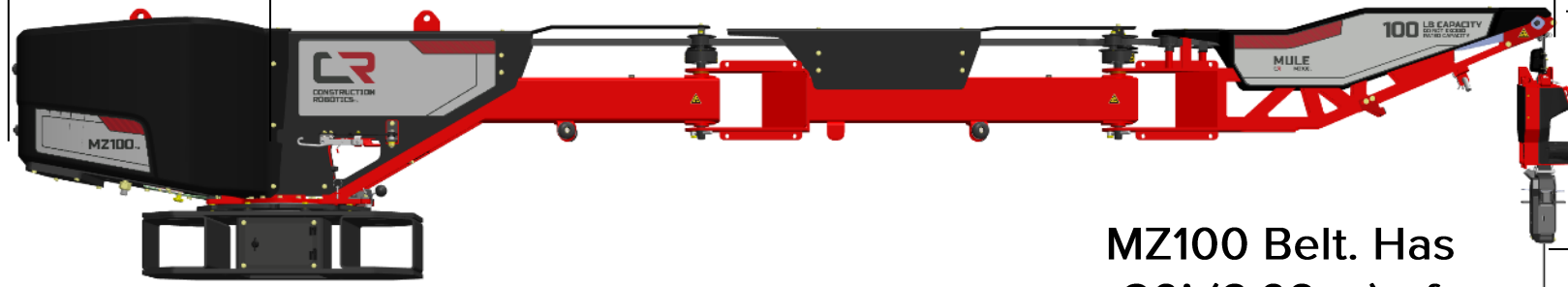




MULE as shown
809 lbs / 367 kg

14’-7”
3.83 m

12’
3.65 m



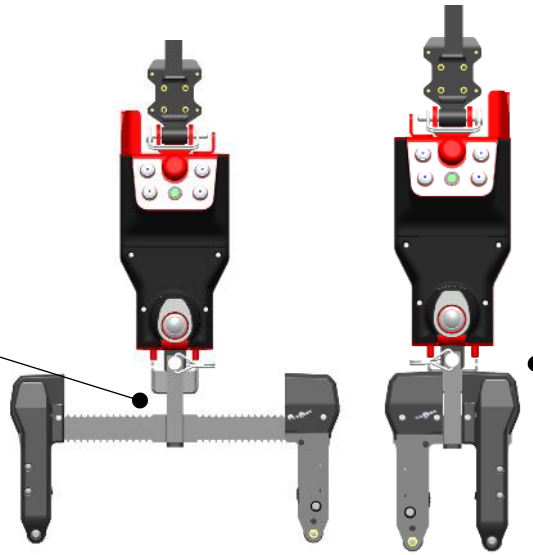
2’-2”
0.66 m

20’
6.09 m
Max
Extension

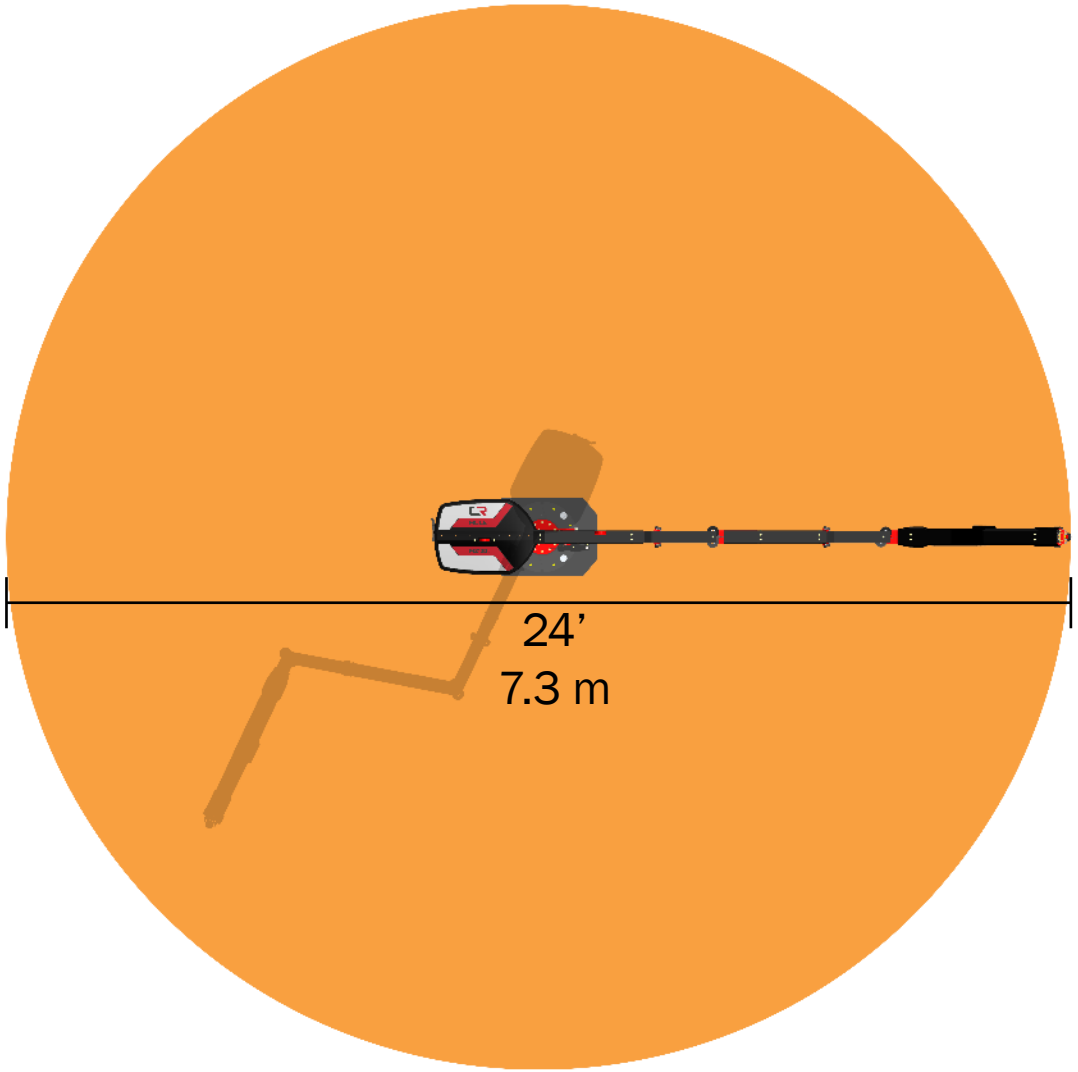
Adjustable
Veneer
Gripper

MZ100 Belt. Has
20’ (6.09 m) of
vertical travel

Gripper bars
available in 4”, 8”
and 12” lengths
(10, 20, 30 cm)



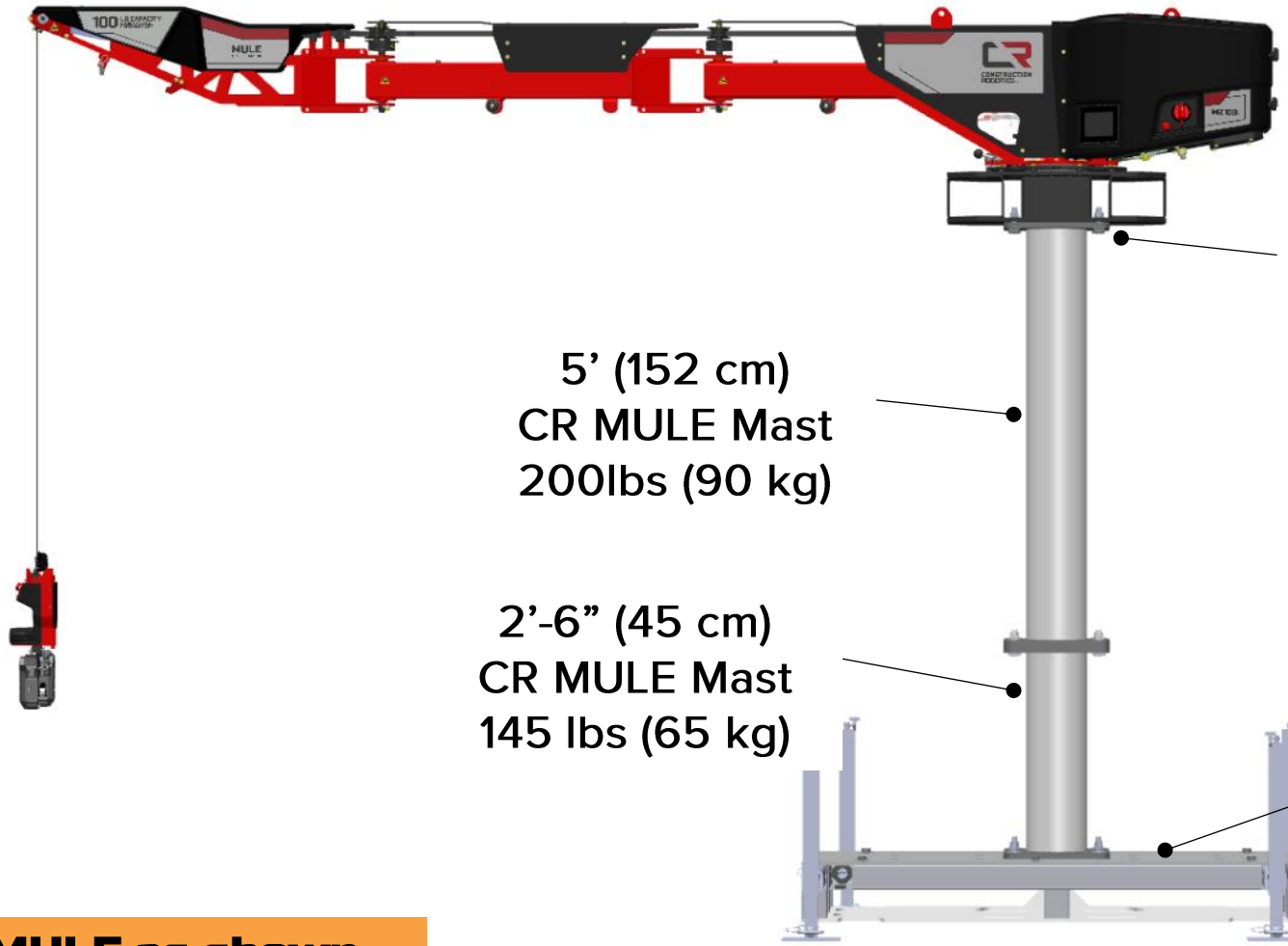
Adjustable
CMU
Gripper



The MZ100 has full 360° rotation providing a 12’ (3.6 m) radius working area.

The orange circle denotes the reach/working area of the MZ100. Arm 2 and Arm 3 allow workers to work around obstructions and provide more flexibility to the worker.

MULE MZ100™



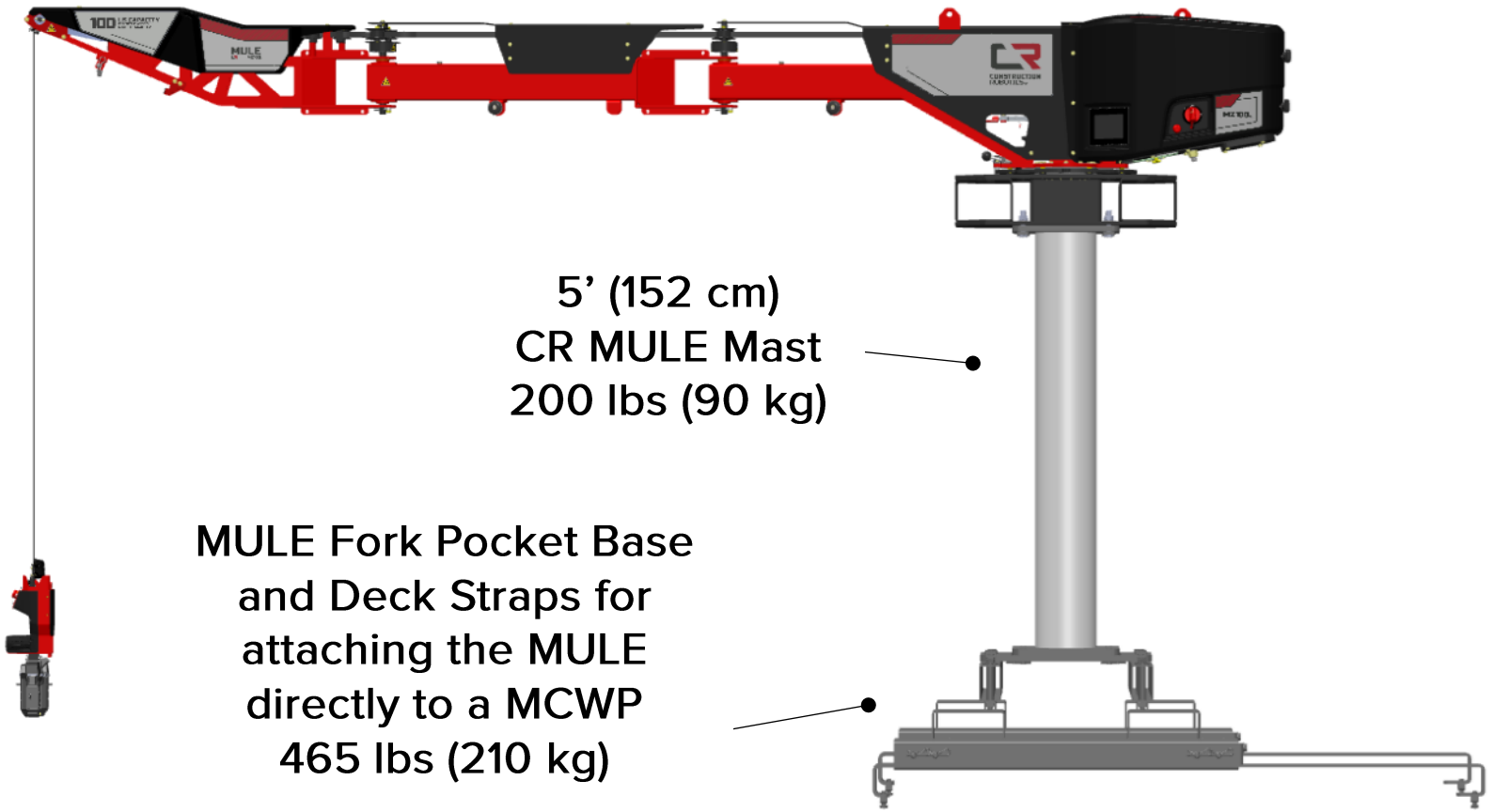
5’ (152 cm)
CR MULE Mast
200lbs (90 kg)

2’-6” (45 cm)
CR MULE Mast
145 lbs (65 kg)

Standard bolt pattern allows for multiple configurations

MULE Ground Base with outriggers, allows for freestanding up to
20’ (6.09 m)
950 lbs (430 kg)

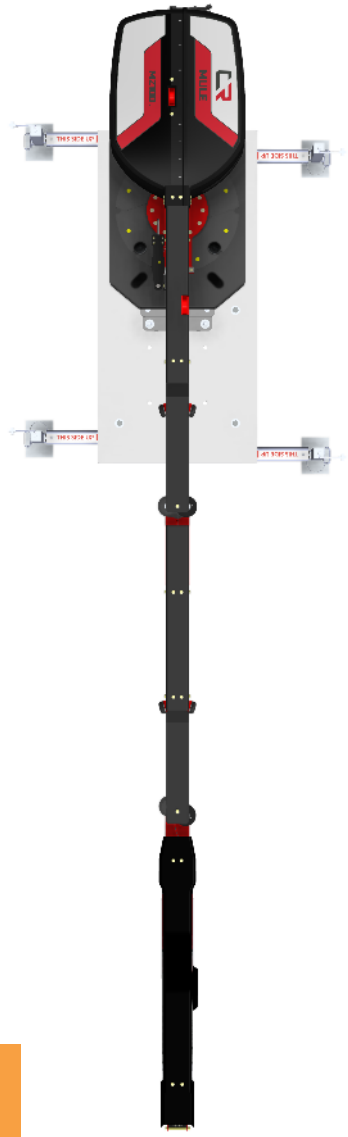
MULE as shown
2,104 lbs / 954 kg

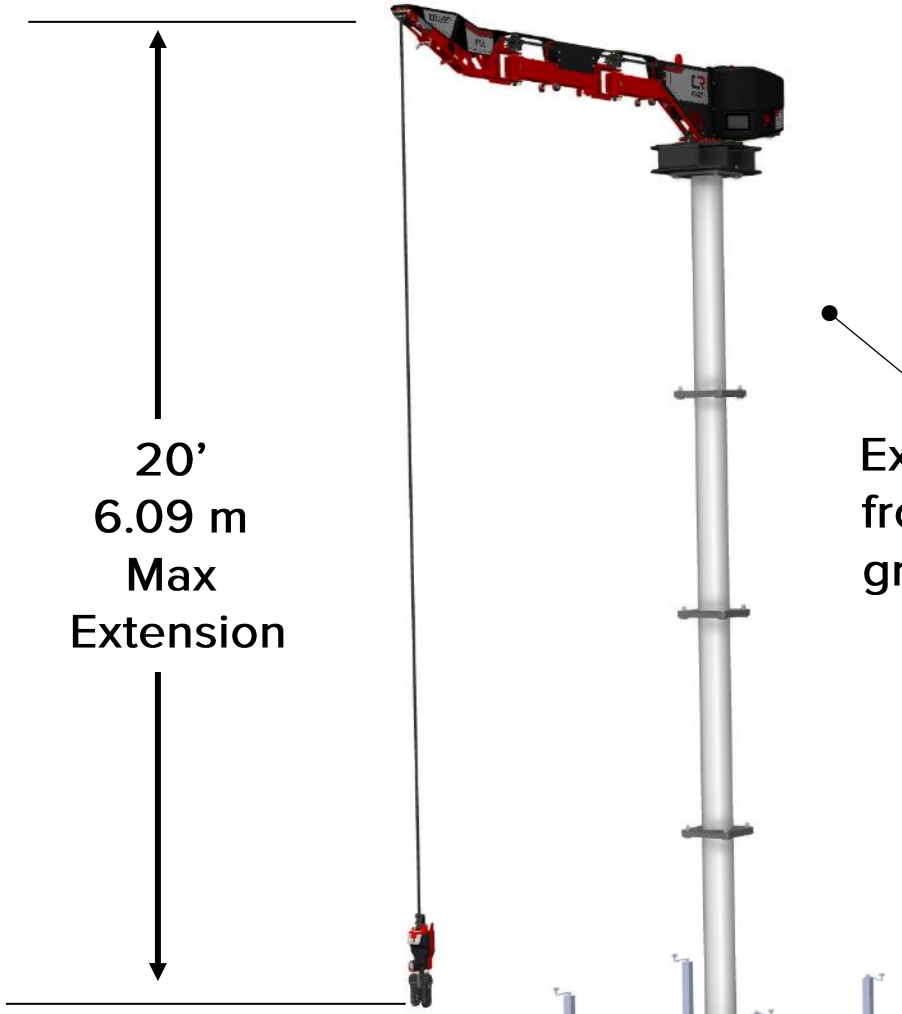


5’ (152 cm)
CR MULE Mast
200 lbs (90 kg)

MULE Fork Pocket Base
and Deck Straps for
attaching the MULE
directly to a MCWP
465 lbs (210 kg)

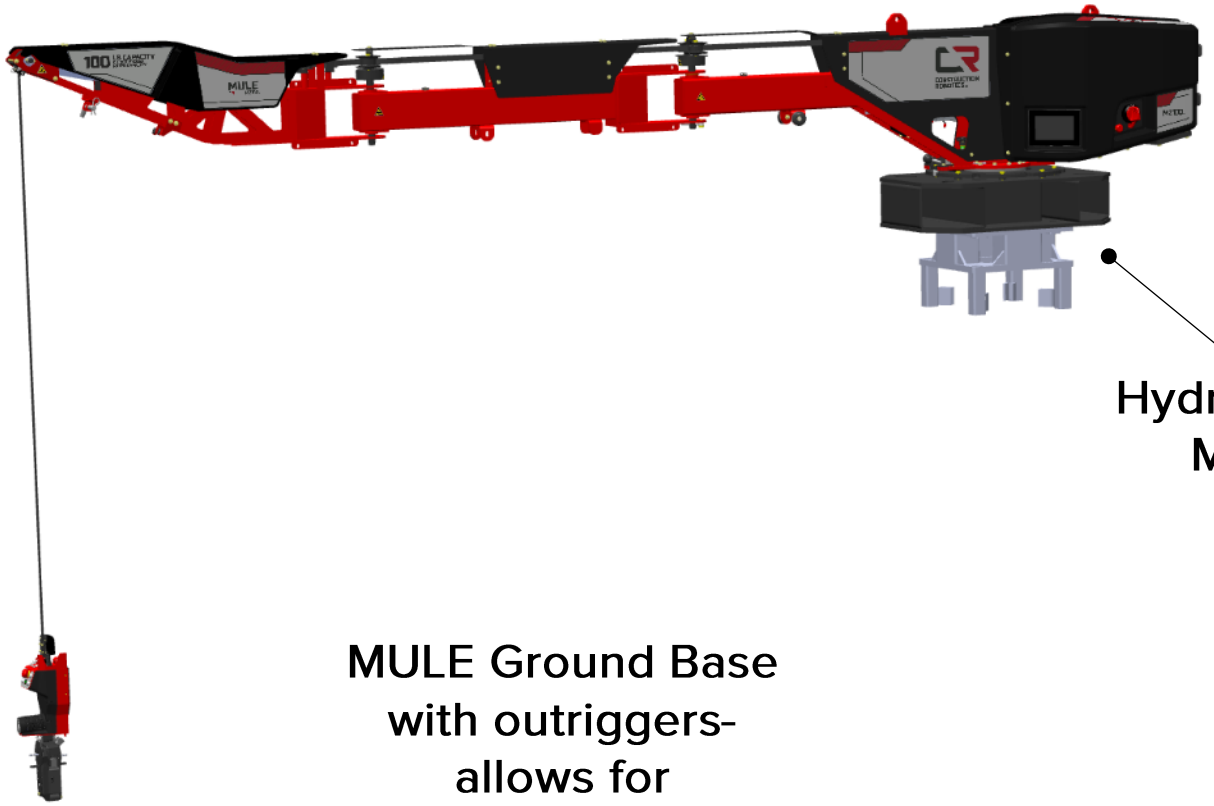
MULE as shown
1,474 lbs / 669 kg





Example configuration from working from the ground base with four 5’ (152 cm) masts

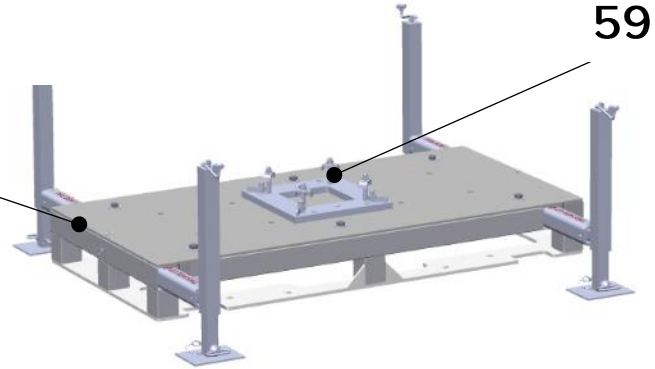
MULE as shown
2,559 lbs / 1,160 kg

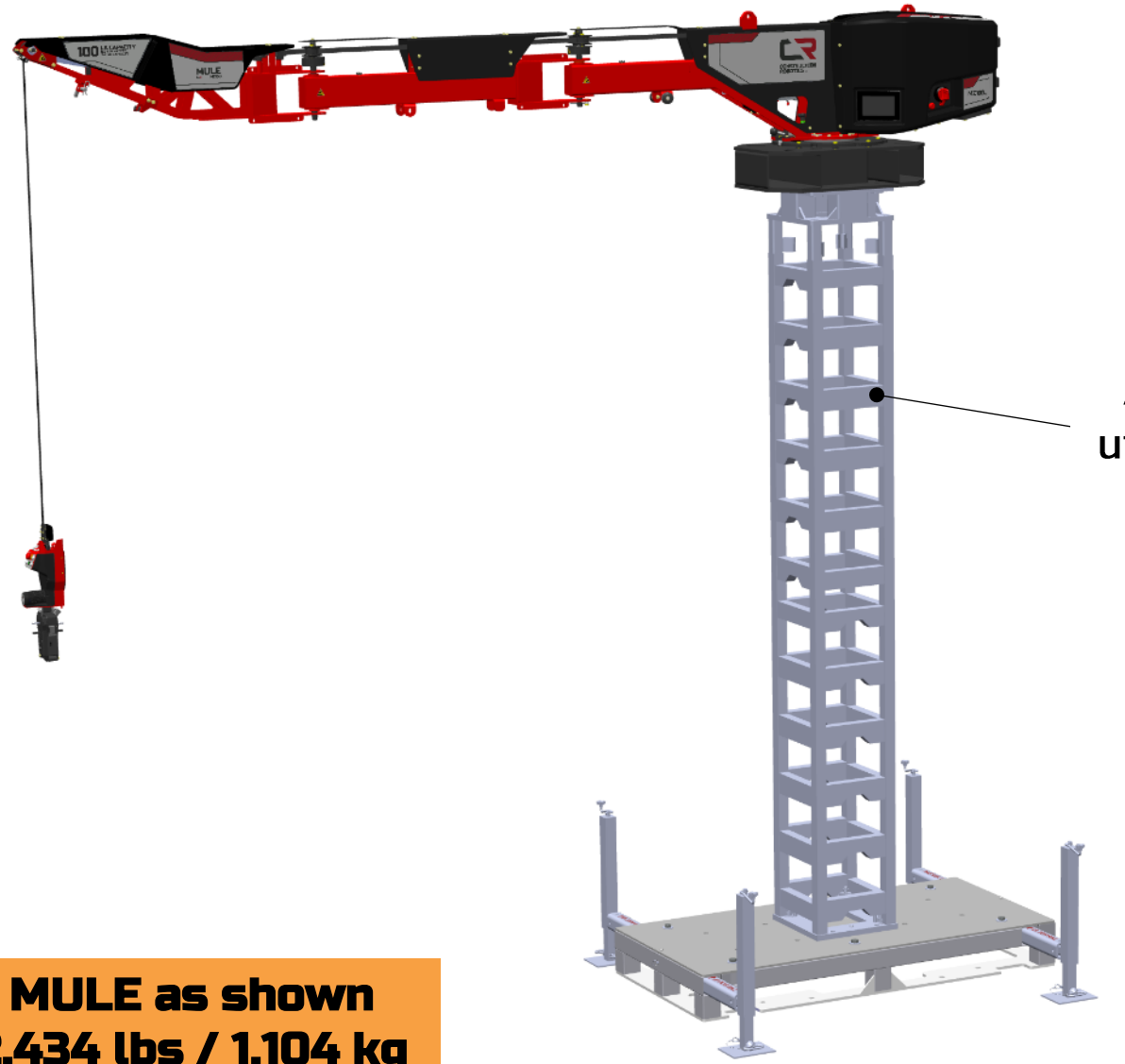


Hydro Mobile/ ProSeries
Mast Adapter Top
148 lbs (67 kg)

MULE Ground Base
with outriggers-
allows for
freestanding up to
20’ (6.09 m)
950 lbs (430 kg)

Hydro Mobile/ ProSeries
Mast Adapter Bottom
59 lbs (27 kg)



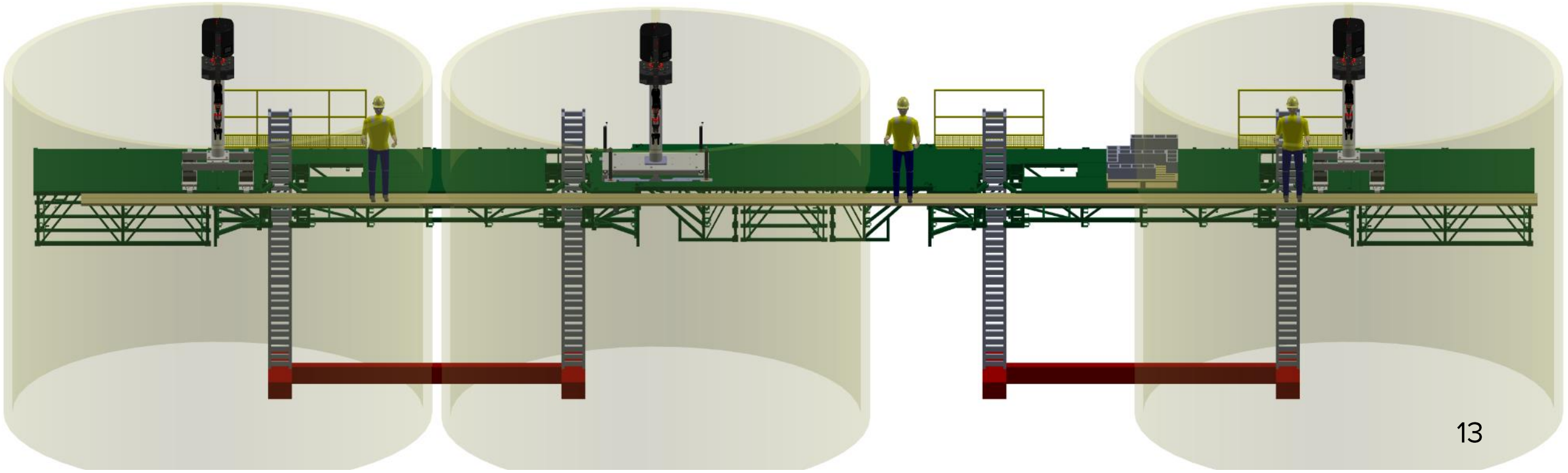


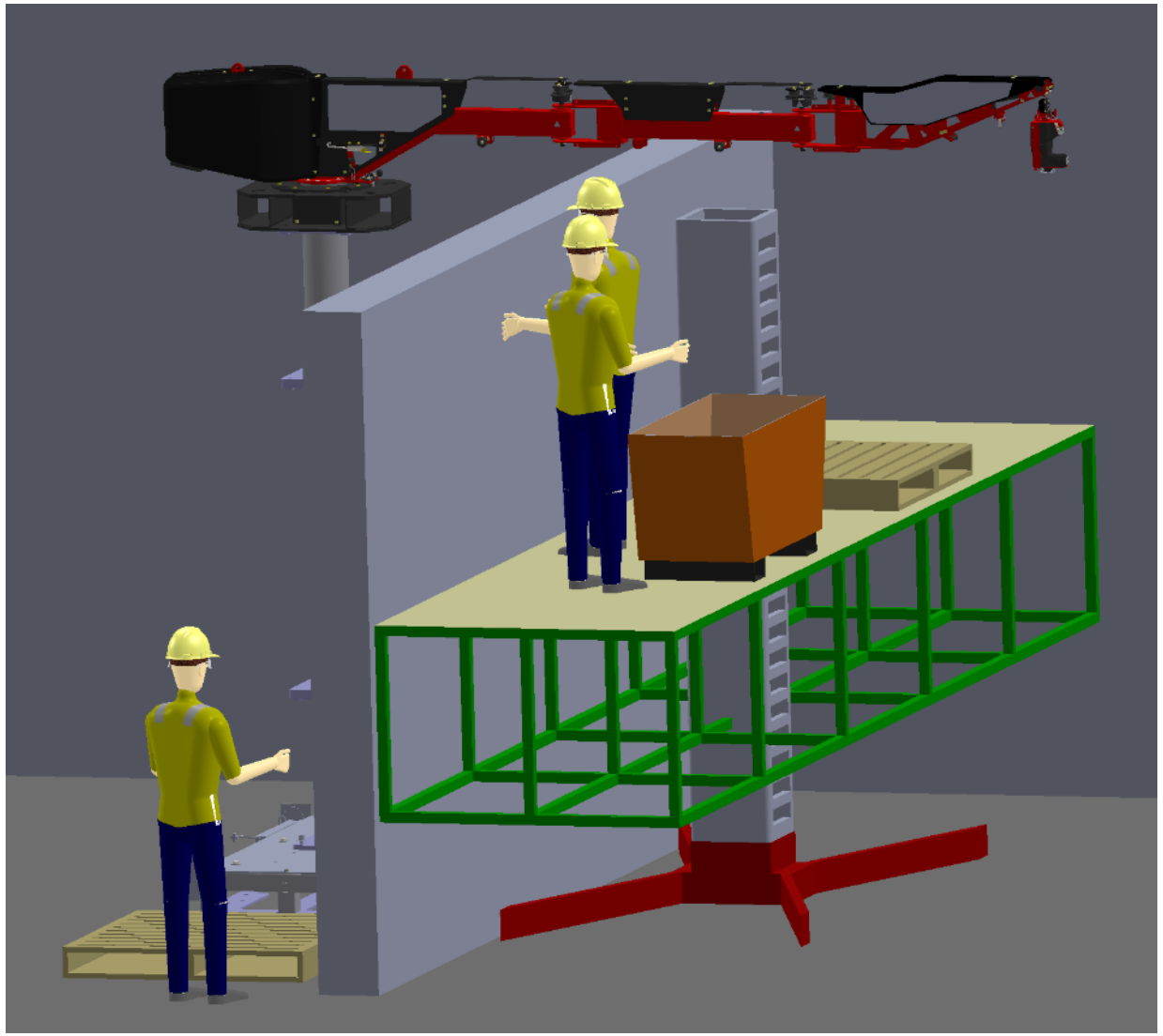
Adapter allows you to utilize Hydro Mobile and ProSeries Masts
5’ (152 cm) Masts
235 lbs (106 kg)

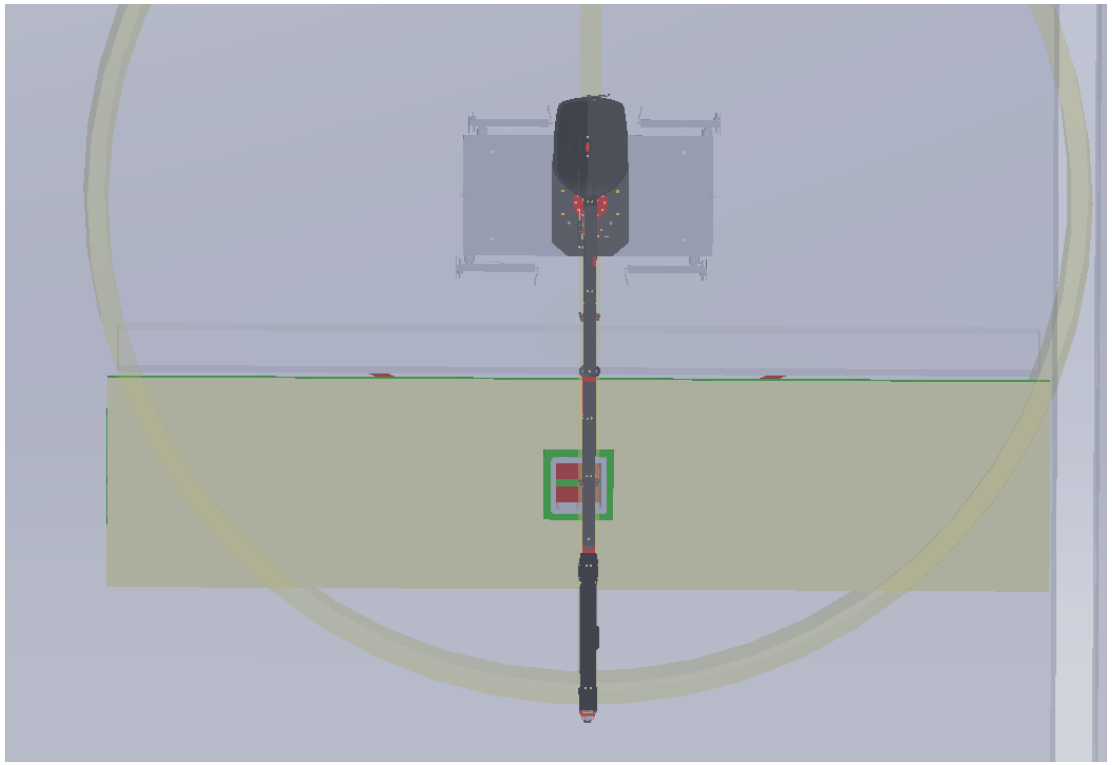
MULE as shown
2,434 lbs / 1,104 kg

Here is an example layout of MCWP setup. The circles show the MZ working area.

This example shows the standard ground base sitting on the HydroMobile. The ground base is heavier than the Fork Pocket Base and takes up a larger space

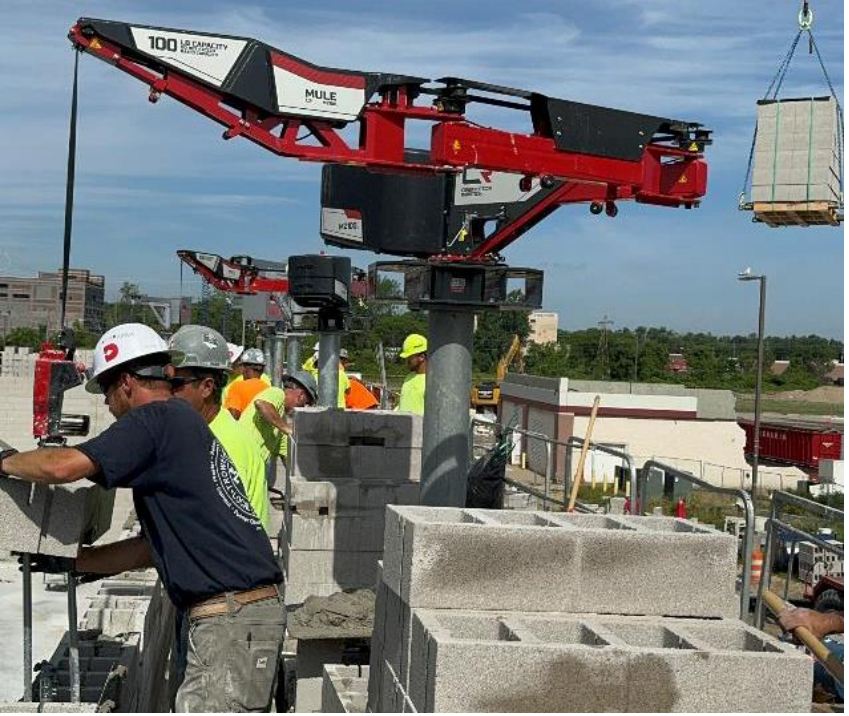






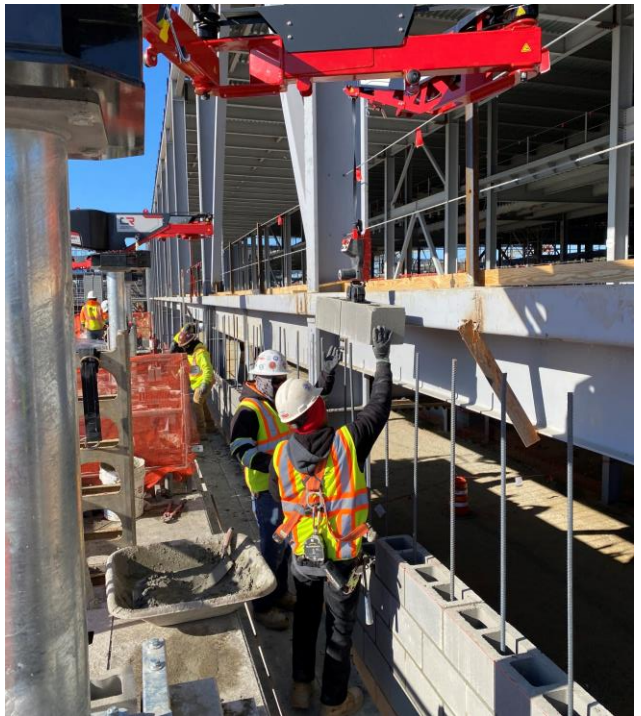
Freestanding the MULE on the opposite side of the wall

Mast Climbers

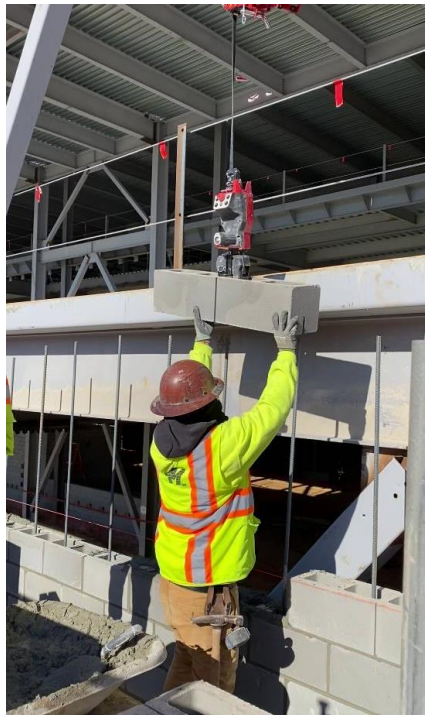

100 LB CAPACITY
MULE


000 LBS


CONSTRUCTION ROBOTICS
LH1




TOLEDO



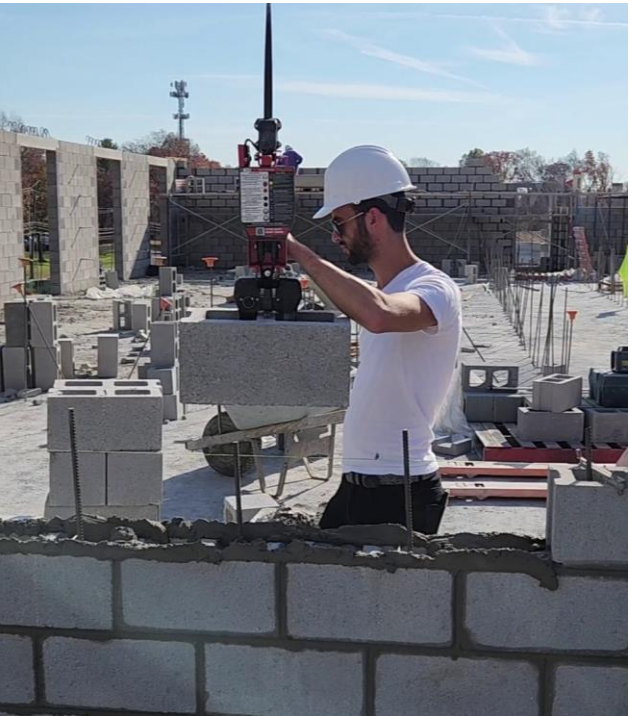

CAT

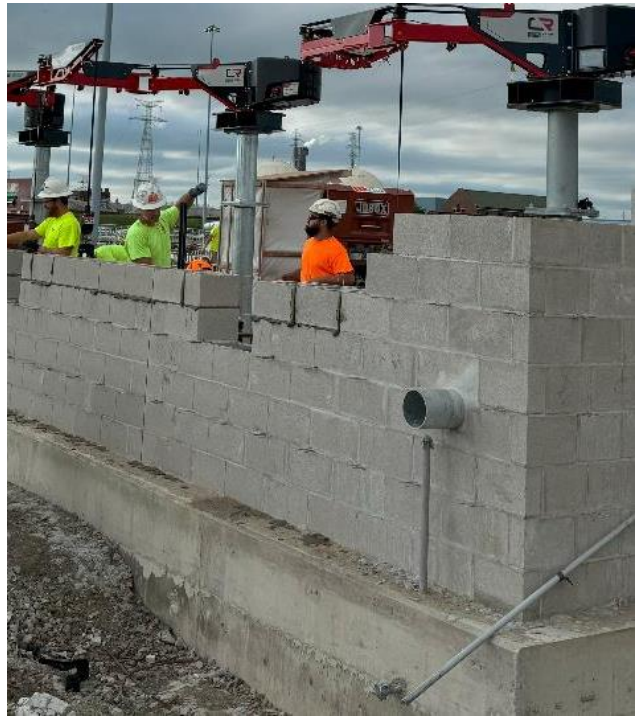

WINCO MASONRY
United Rentals


MZ100
100 LB CAPACITY
MULE


MULE

Setup



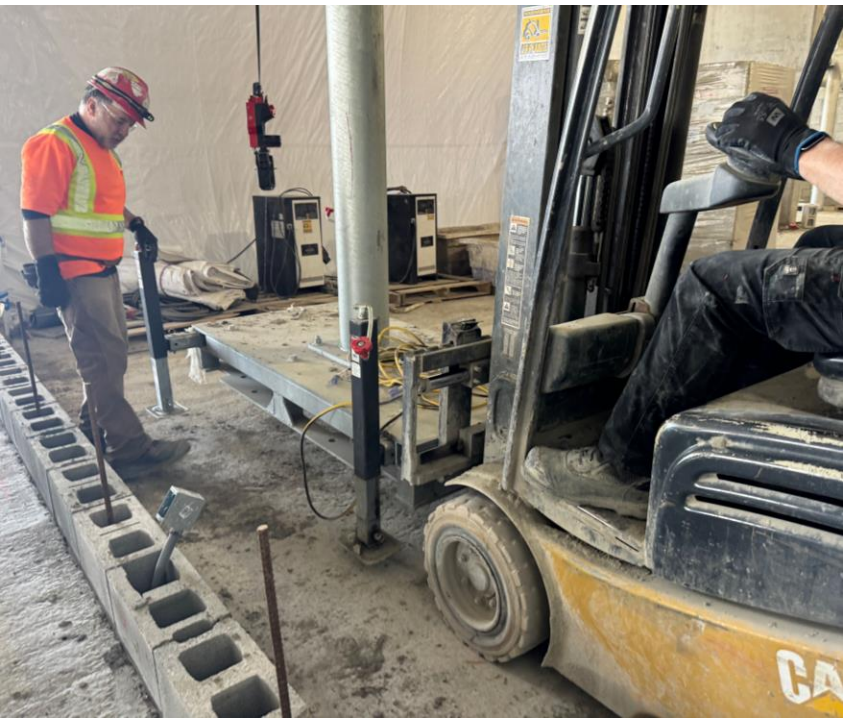


Ground


United Rentals
JLG

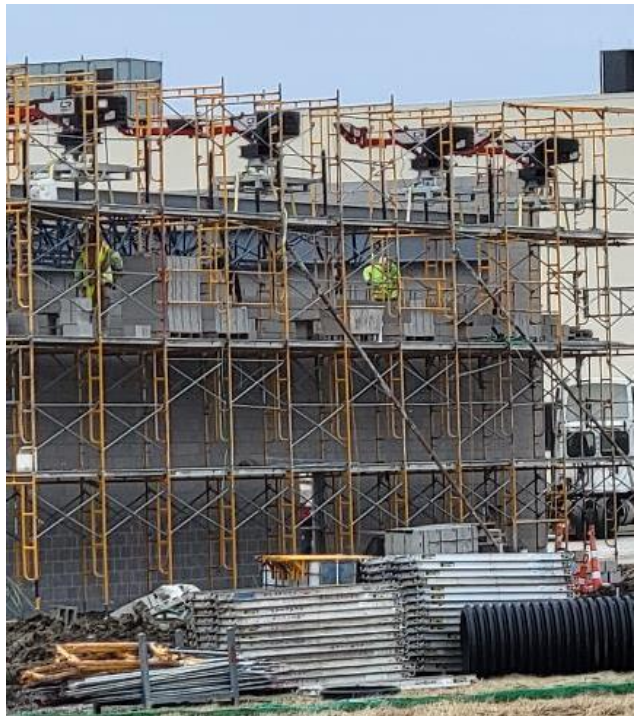
Moving


NEW HOLLAND

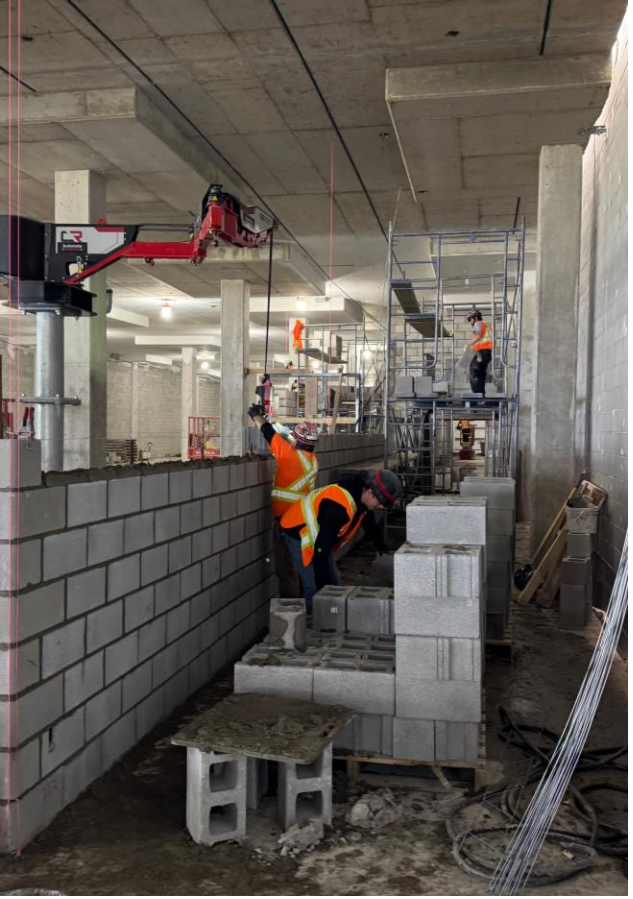


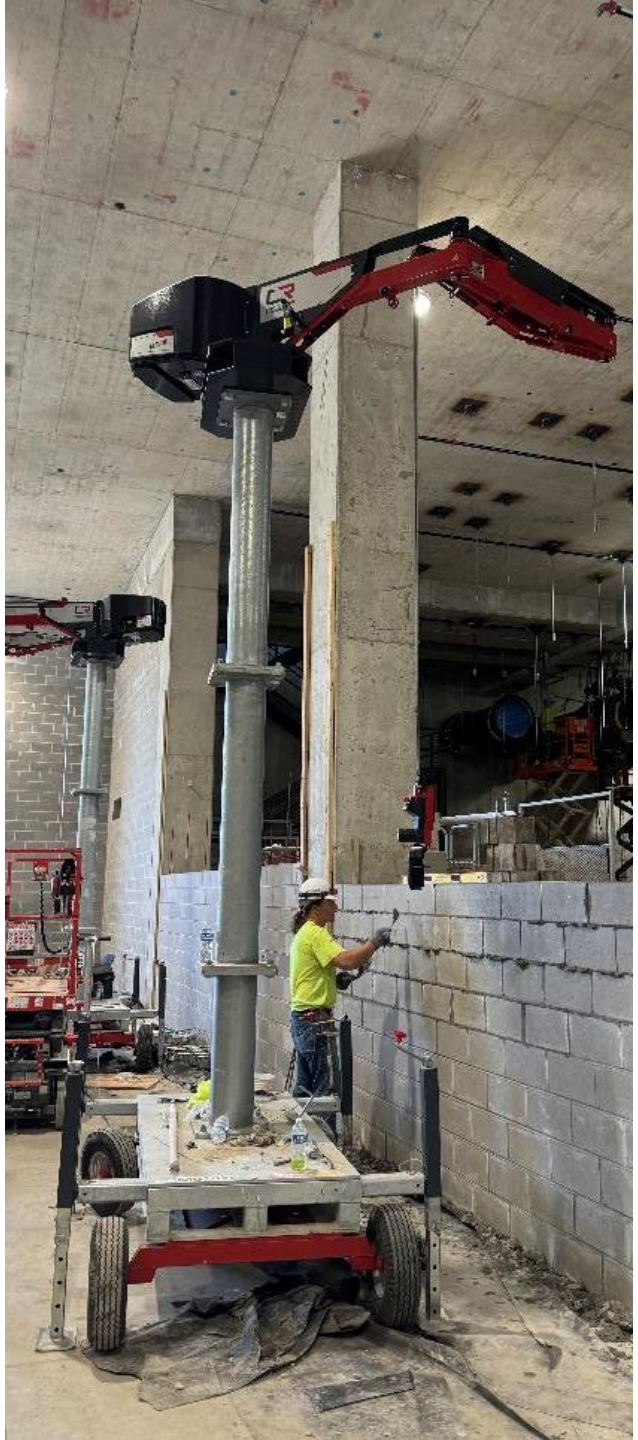

complete equipment
complete
10054

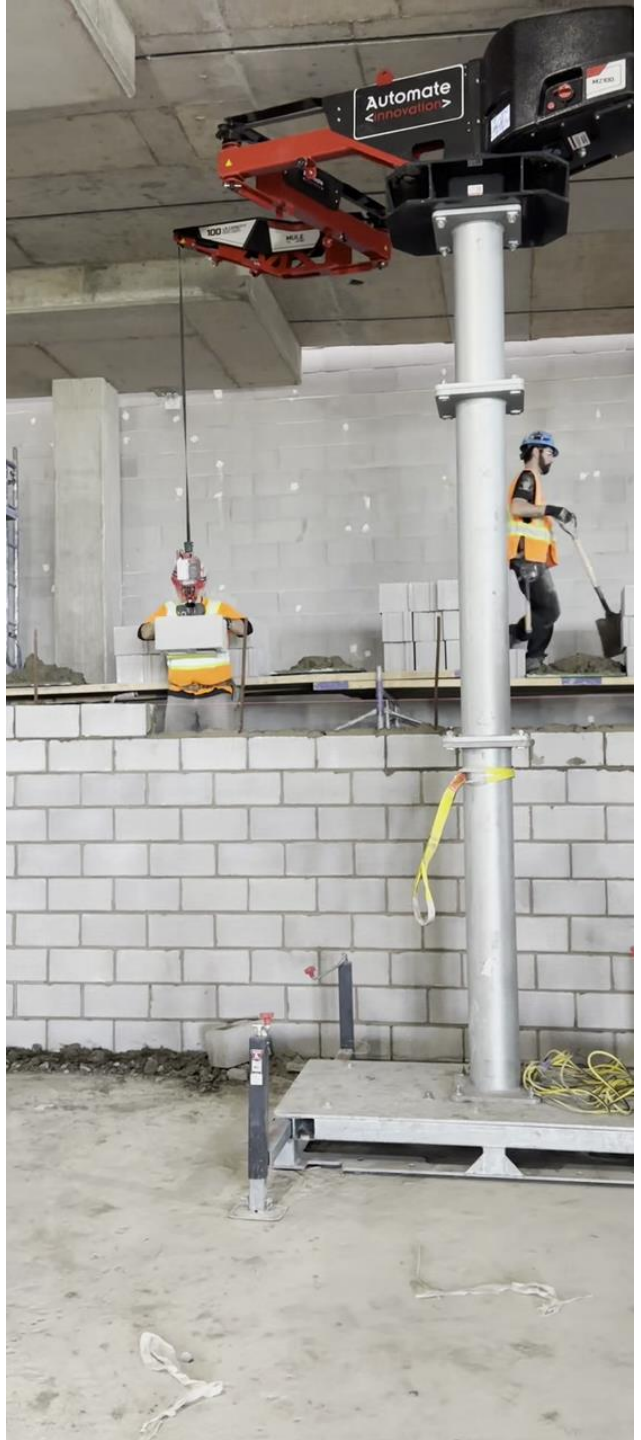
Frame



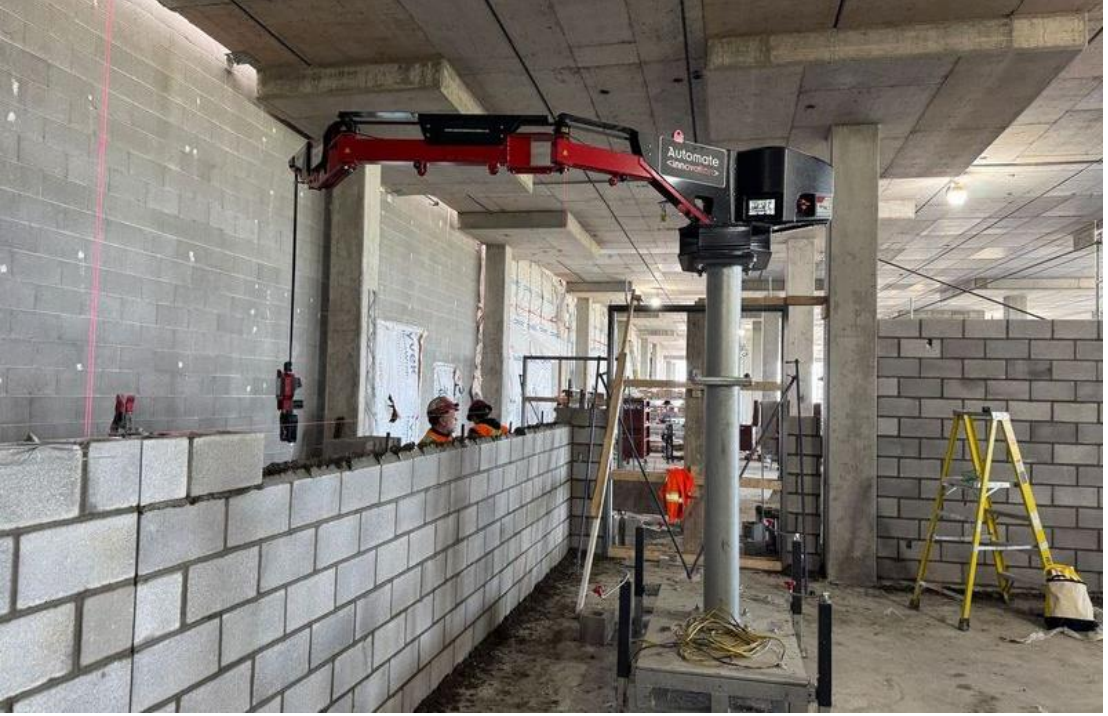
Rail

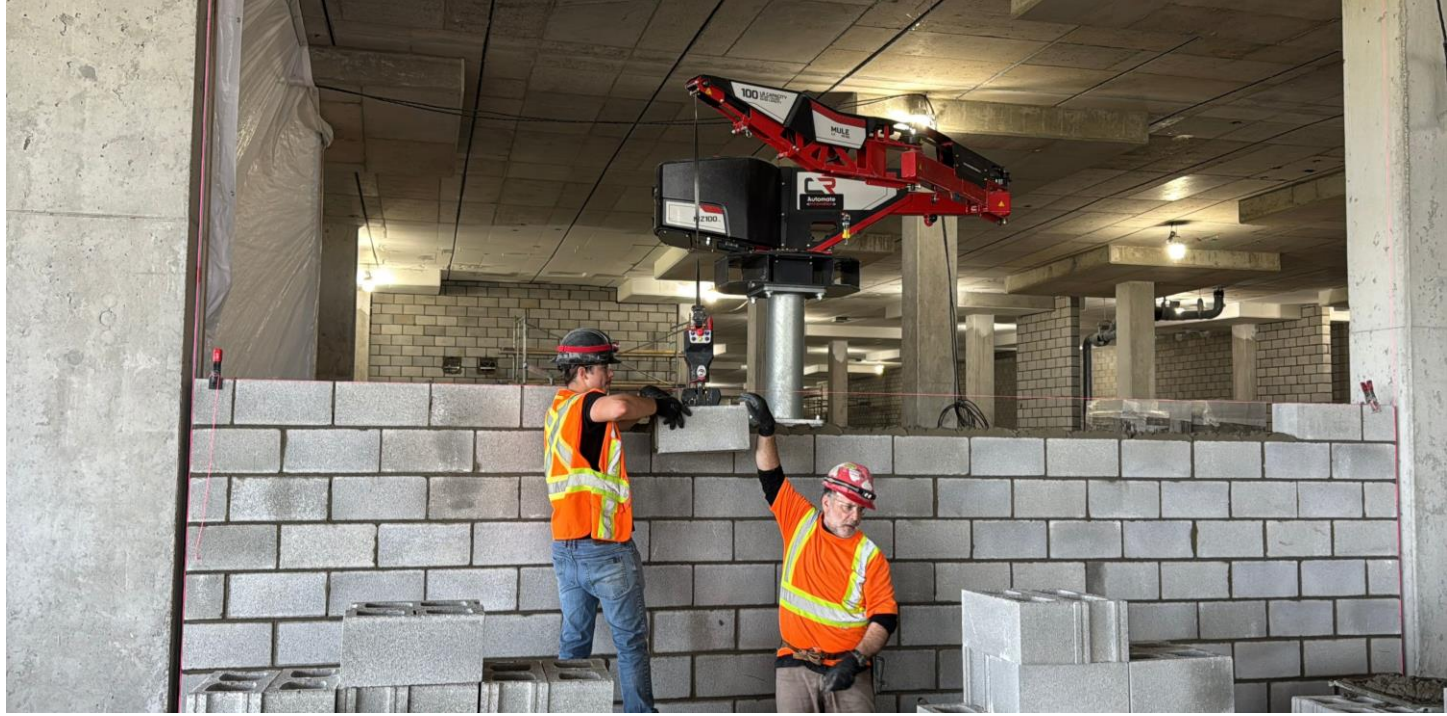


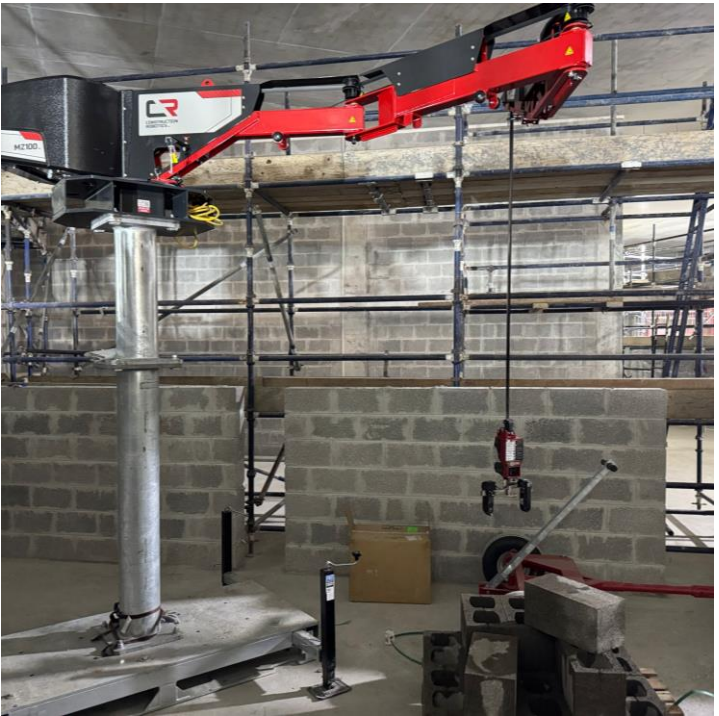




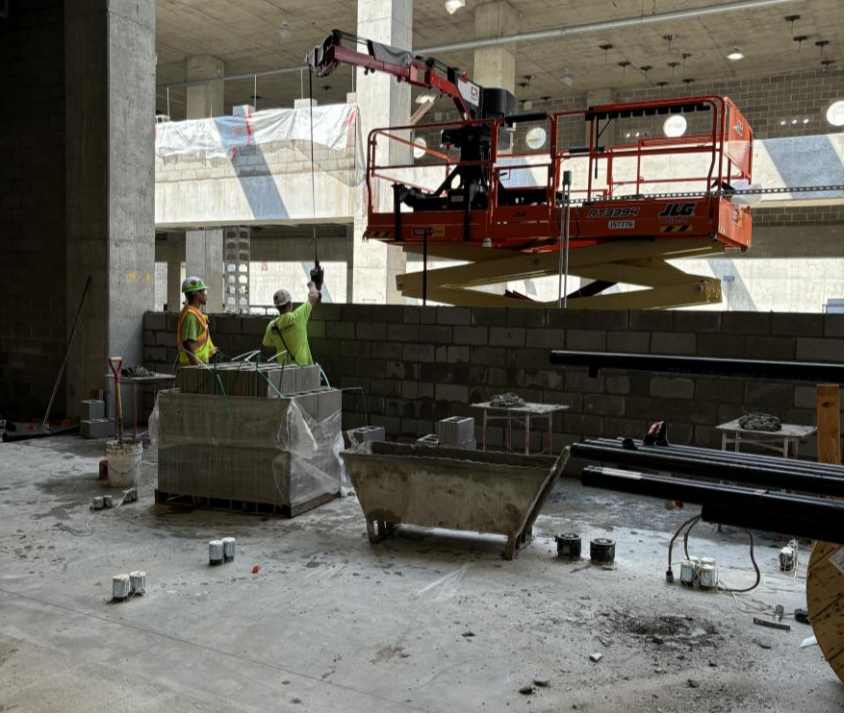
Interior


Automate





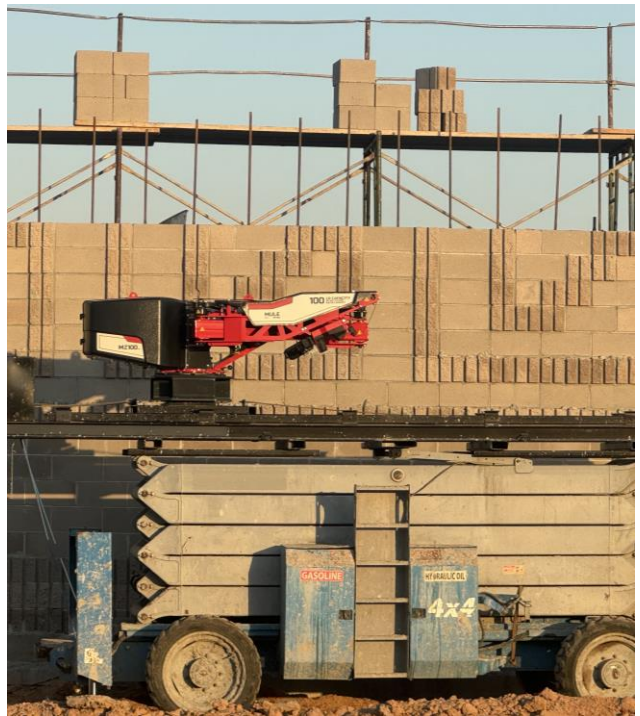
Mobile

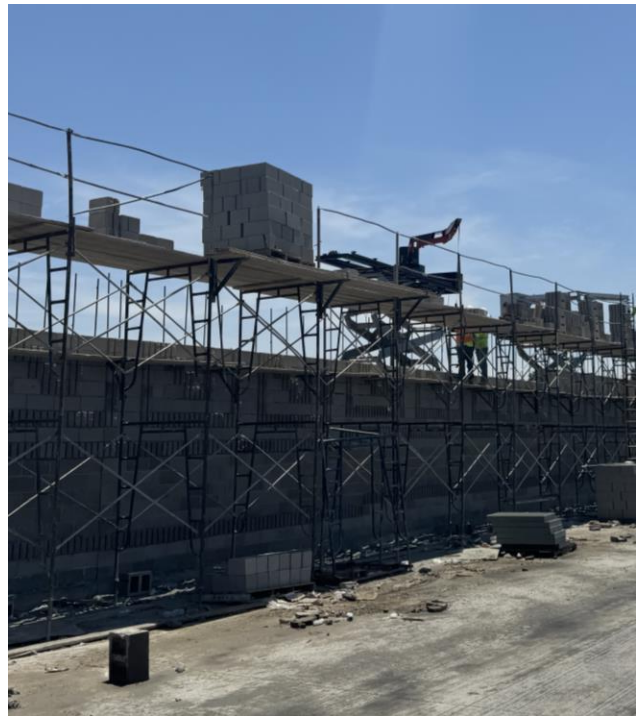

JLG
RT3394

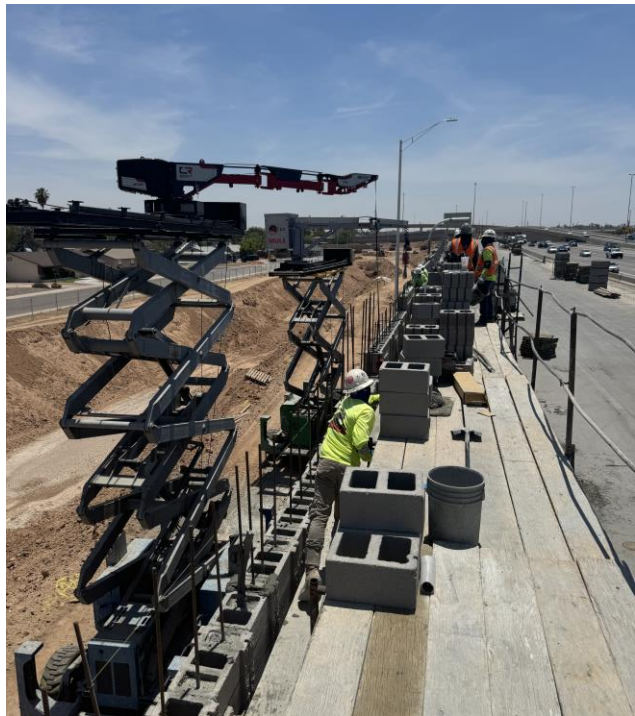

MULE
STOW


JLG


RT3394


MULE
GASOLINE
HYDRAULIC OIL
4x4



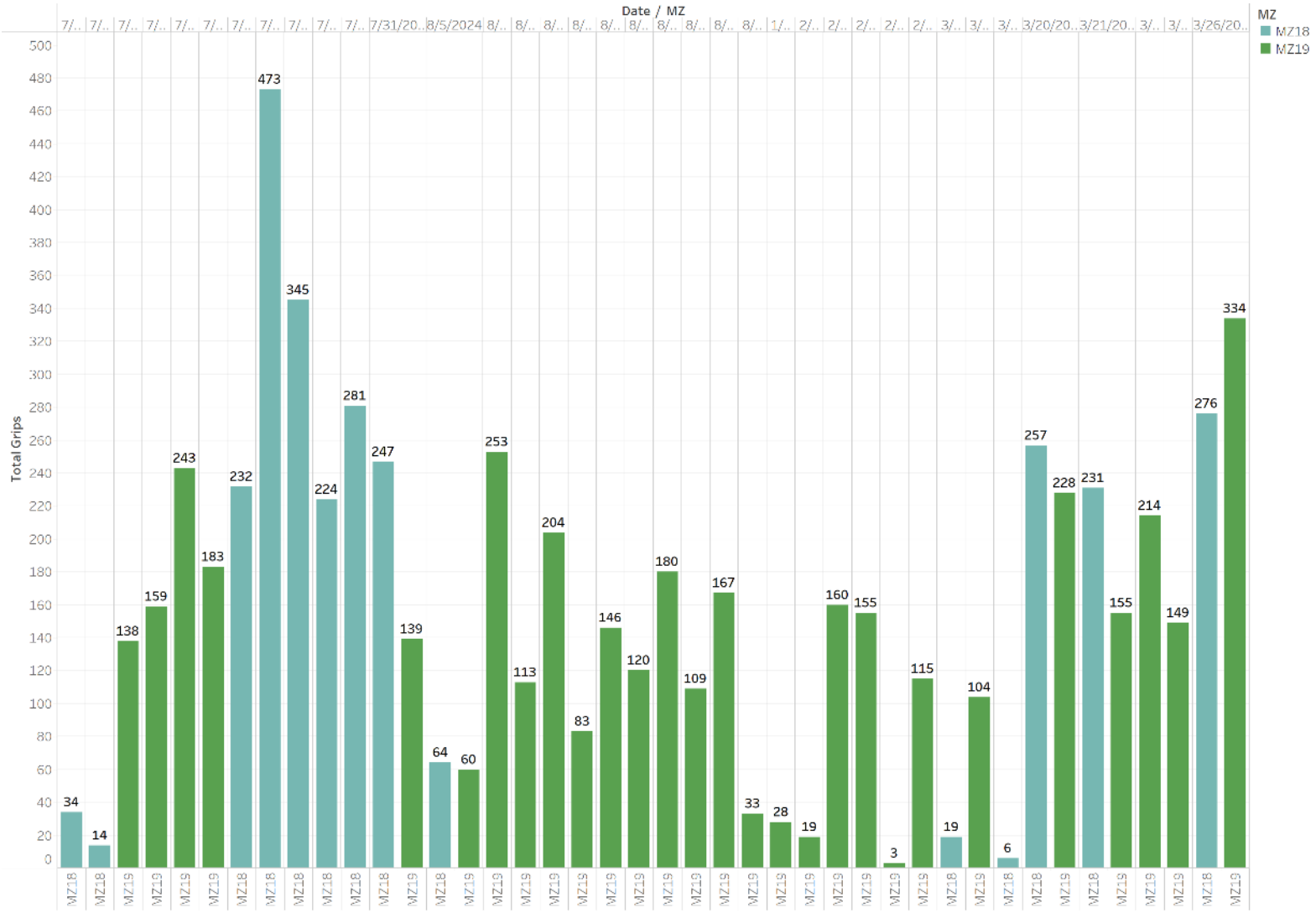


MULE MZ100™

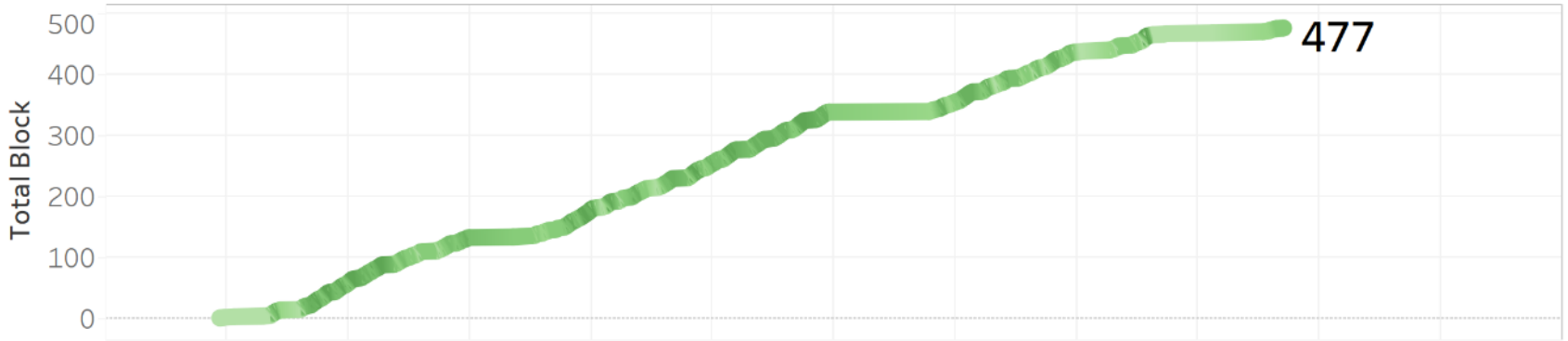
Sample data summary

Date	MZ	Total Grips	GPH Day	GPH Run	Machine On	First Grip	Last Grip	Machine Off	Total Run Time	Average Time between Grips	Avg. Time between Grips Running	Longest Down Time	Actual Runtime	Acutal Down Time
			Grips Per Hour Machine On to Machine Off	Grips Per Hour not including downtime	When the machine was turned	The First grip of the day	The last grip of the day	When the machine was turned off	Time between first and last grip	Avg. time between grips, all grips (Minutes)	Average time between grips, when running (Minutes)	Longest time between grips (h:mm)	Runtim excludes time between grips longer than 10 minutes	Adds up all the time that the machine is down
7/15/2024	MZ18	34	11.7	41.9	8:07 AM	8:09 AM	11:01 AM	11:01 AM	2:52	4.8		00:52	00:48	02:05
7/16/2024	MZ18	14	12.4	45.8	3:15 PM	3:16 PM	4:23 PM	4:23 PM	1:06	4.2		00:49	00:18	00:49
7/17/2024	MZ19	138	46.0	65.4	8:12 AM	8:21 AM	11:12 AM	11:12 AM	2:51	1.3		00:19	02:06	00:53
7/18/2024	MZ19	159	24.6	59.5	7:53 AM	7:57 AM	2:21 PM	2:21 PM	6:24	2.4		01:15	02:40	03:47
7/19/2024	MZ19	243	48.8	80.6	7:54 AM	7:56 AM	12:53 PM	12:53 PM	4:57	1.2		00:23	03:00	01:58
7/22/2024	MZ19	183	24.4	80.7	8:19 AM	8:30 AM	3:49 PM	3:49 PM	7:18	2.4		03:22	02:16	05:13
7/24/2024	MZ18	232	51.1	75.3	7:58 AM	7:59 AM	12:30 PM	12:30 PM	4:31	1.2		00:23	03:04	01:27
7/25/2024	MZ18	432	55.5	79.7	7:56 AM	7:58 AM	3:43 PM	3:43 PM	7:45	1.1		00:49	05:25	02:22
7/25/2024	MZ18	41	20.3	52.2	2:41 PM	2:53 PM	4:42 PM	4:42 PM	1:48	2.8		00:24	00:47	01:14
7/26/2024	MZ18	345	46.8	70.7	7:54 AM	7:58 AM	3:17 PM	3:17 PM	7:19	1.3		00:42	04:52	02:29
7/29/2024	MZ18	224	28.4	73.5	7:54 AM	8:01 AM	3:47 PM	3:47 PM	7:45	2.1		00:52	03:02	04:49
7/30/2024	MZ18	281	35.9	61.8	7:48 AM	7:53 AM	3:38 PM	3:38 PM	7:44	1.7		00:58	04:32	03:17
7/31/2024	MZ18	247	31.5	70.3	7:52 AM	7:53 AM	3:42 PM	3:42 PM	7:48	1.9		01:01	03:30	04:18
7/31/2024	MZ19	139	20.2	56.4	8:29 AM	8:33 AM	3:21 PM	3:21 PM	6:47	2.9		02:03	02:27	04:24
8/5/2024	MZ18	64	13.9	67.4	11:08 AM	11:14 AM	3:44 PM	3:44 PM	4:29	4.2		01:06	00:56	03:38
8/5/2024	MZ19	60	9.3	79.8	9:18 AM	11:14 AM	3:43 PM	3:43 PM	4:29	6.2		01:55	00:45	05:40
8/7/2024	MZ19	253	32.2	67.8	7:26 AM	7:26 AM	3:16 PM	3:16 PM	7:49	1.8		00:54	03:43	04:06
8/8/2024	MZ19	113	13.6	107.4	7:35 AM	8:27 AM	3:54 PM	3:54 PM	7:26	4.3		04:50	01:03	07:16
8/13/2024	MZ19	204	26.0	84.3	7:49 AM	7:50 AM	3:40 PM	3:40 PM	7:50	2.3		02:00	02:25	05:25
8/14/2024	MZ19	83	22.9	49.9	8:37 AM	8:46 AM	12:14 PM	12:14 PM	3:28	2.6		00:35	01:39	01:57
8/22/2024	MZ19	146	20.7	89.4	8:52 AM	8:52 AM	3:55 PM	3:55 PM	7:02	2.9		01:41	01:37	05:25
8/23/2024	MZ19	120	20.5	61.7	8:50 AM	8:51 AM	2:42 PM	2:42 PM	5:50	2.9		01:18	01:56	03:55
8/26/2024	MZ19	180	23.2	66.8	8:18 AM	8:26 AM	4:04 PM	4:04 PM	7:38	2.6		01:30	02:41	05:04
8/27/2024	MZ19	109	18.5	76.3	10:24 AM	10:29 AM	4:17 PM	4:17 PM	5:47	3.2		01:18	01:25	04:27
8/28/2024	MZ19	167	20.8	60.3	8:03 AM	8:06 AM	4:06 PM	4:06 PM	7:59	2.9		01:17	02:46	05:16
8/29/2024	MZ19	33	23.1	58.8	8:01 AM	8:05 AM	9:26 AM	9:26 AM	1:21	2.5		00:32	00:33	00:52
1/17/2025	MZ19	28	13.7	48.3	10:24 AM	10:36 AM	12:07 PM	12:27 PM	1:31	3.2	1.2	00:46	00:34	01:00
2/5/2025	MZ19	19	27.0	46.2	2:59 PM	3:01 PM	3:24 PM	3:42 PM	0:23	1.2	1.2	00:05	00:24	00:00
2/6/2025	MZ19	160	22.1	55.5	8:29 AM	8:31 AM	3:40 PM	3:44 PM	7:09	2.7	1.1	01:39	02:52	04:18
2/7/2025	MZ19	155	64.5	55.2	7:50 AM	7:55 AM	1:41 PM	10:15 AM	5:46	2.2	1.1	01:58	02:48	02:56
2/15/2025	MZ19	3	8.8	96.4	8:21 AM	8:37 AM	8:38 AM	8:41 AM	0:01	3.5	0.5	00:15	00:01	00:15
2/28/2025	MZ19	115	37.2	58.5	8:23 AM	8:24 AM	11:24 AM	11:28 AM	2:59	1.5	1.0	00:29	01:57	01:02
3/11/2025	MZ18	19	29.2	34.7	9:36 AM	9:41 AM	10:12 AM	10:15 AM	0:30	1.6	1.6	00:06	00:32	00:00
3/17/2025	MZ19	104	18.0	52.0	9:55 AM	10:45 AM	3:27 PM	3:41 PM	4:42	2.7	1.2	01:30	01:59	02:42
3/19/2025	MZ18	6	16.8	32.7	2:46 PM	2:47 PM	2:57 PM	3:08 PM	0:10	1.4	1.4	00:02	00:11	00:00
3/20/2025	MZ18	257	33.1	53.6	7:48 AM	7:55 AM	3:24 PM	3:33 PM	7:28	1.8	1.1	01:10	04:47	02:48
3/20/2025	MZ19	228	29.7	54.4	7:59 AM	8:00 AM	3:25 PM	3:40 PM	7:25	1.9	1.1	01:30	04:11	03:14
3/21/2025	MZ18	231	35.1	61.2	7:48 AM	7:49 AM	2:20 PM	2:23 PM	6:31	1.7	1.0	01:19	03:46	02:45
3/21/2025	MZ19	155	23.8	68.0	7:47 AM	7:51 AM	1:12 PM	2:19 PM	5:21	2.1	0.9	01:31	02:16	03:08
3/24/2025	MZ19	214	29.1	52.6	8:18 AM	8:18 AM	3:36 PM	3:39 PM	7:18	2.0	1.2	01:20	04:04	03:14
3/25/2025	MZ19	149	18.0	59.1	7:18 AM	7:18 AM	3:15 PM	3:36 PM	7:56	3.2	1.0	03:40	02:31	05:25
3/26/2025	MZ19	334	39.8	84.9	7:27 AM	7:34 AM	3:46 PM	3:50 PM	8:11	1.5	0.7	01:29	03:56	04:22
3/26/2025	MZ18	276	29.3	50.9	7:25 AM	7:25 AM	3:41 PM	4:51 PM	8:16	1.8	1.2	01:08	05:25	02:51

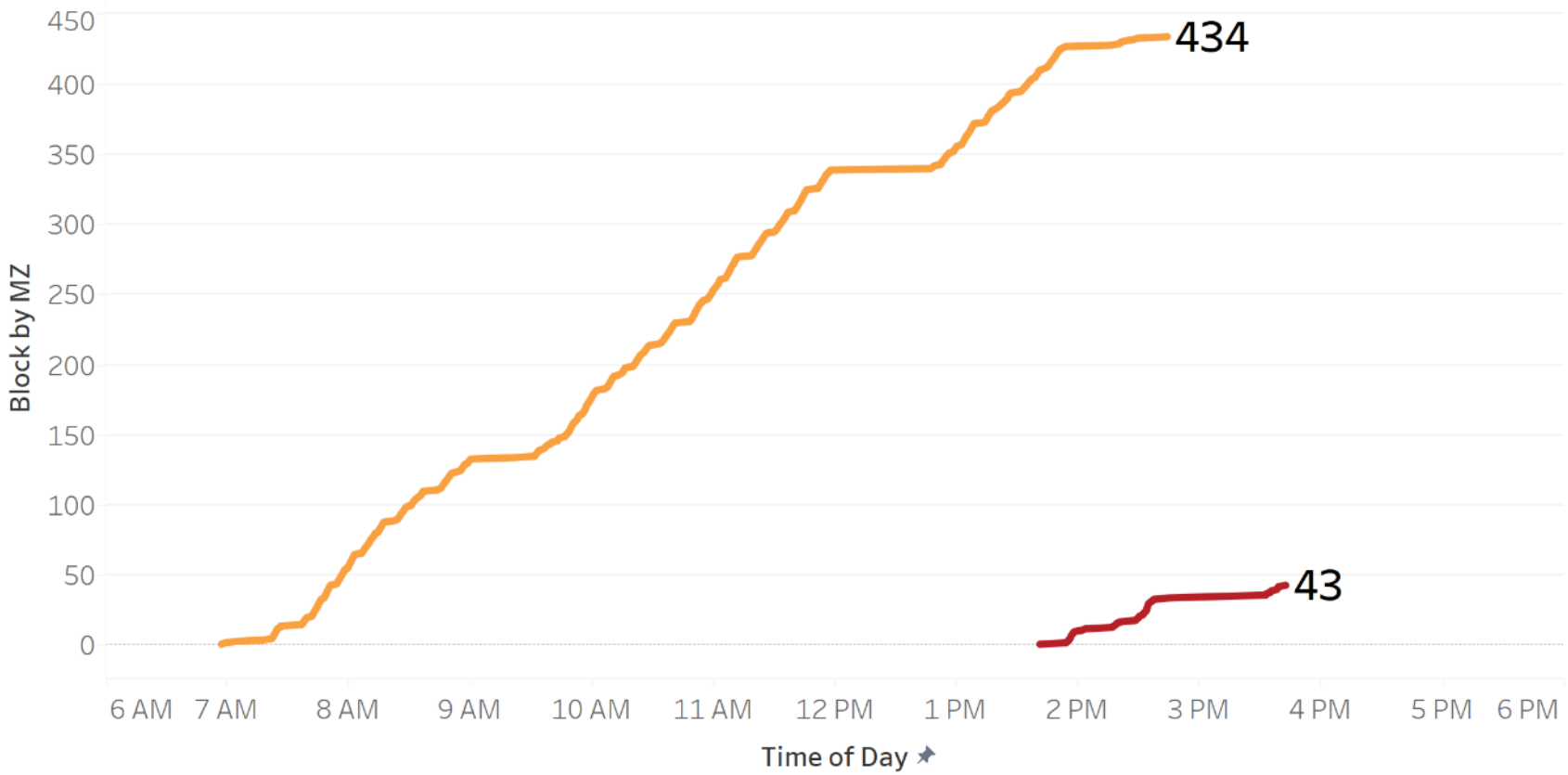
Sample project data at a high level.
We can deep dive into the daily activity.



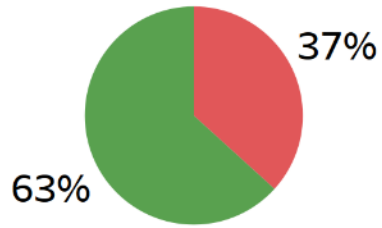
Total Blocks - 7/25/2024



Blocks by MZ - 7/25/2024



Running Vs Not

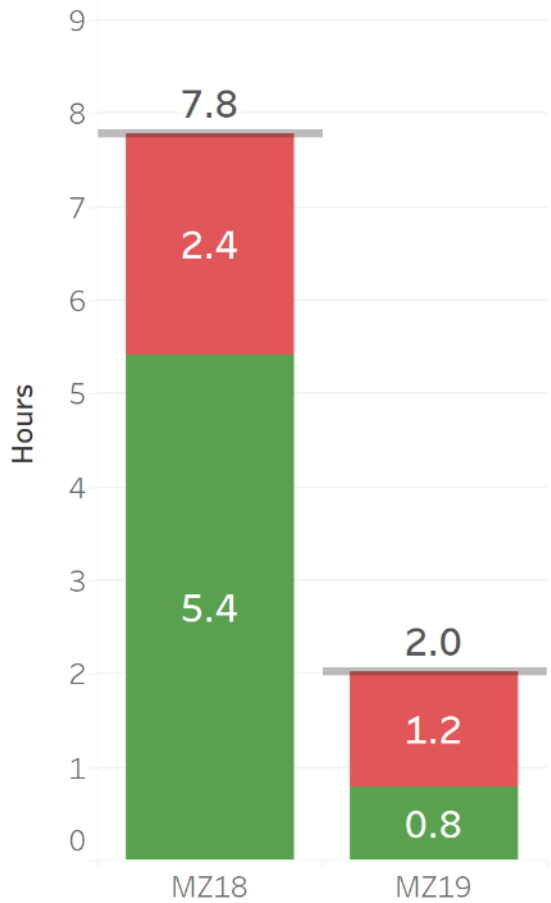


Running vs Not
Down Time
Running

Date
7/25/2024
Show history

Machine
MZ18
MZ19

Running vs Not



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