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IO-Models

LEGACY U-SERIES ROLL OFF CABLE HOISTS

MODELS: U3/U4/U5/UT/U75/U75T-IO

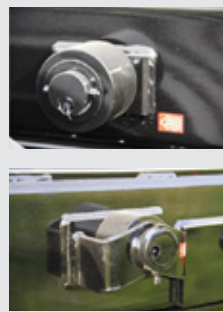
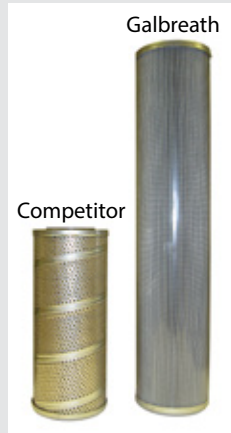
Inside/Outside Rail (IO) cable hoists are designed to carry both inside and outside rail containers to maximize their versatility. These models can also be used to haul old style bail hook boxes. By simply positioning the IO hoist in place of the bail hook when a container is worn out, it can be easily replaced with industry standard OR style boxes. Through these solutions, the IO models are built to last, saving time and money.



Standard Features

- Inside air controls mounted in our ergonomic power tower featuring Plug And Play® wiring
- Back-up alarm & hoist up alarm with signal light in cab
- Secondary manual controls mounted outside on driver's side
- Outside frame rail stationary rear container hold downs
- Steel tank w/ internal 3 micron return filtration
- 10" Grease grooved cable sheaves
- Heavy-duty cast ductile iron rear hinge
- Automatic spring loaded pass through front container lock
- 4" O.D. Side rollers with bronze bearings
- 6" O.D. Inside rail rollers with bronze bearings
- 1/2" Inside rail container guides on top of main frame
- Swivel eye cable end with latch
- Auto fold air assist ICC bumper
- Pintle adaptable rear apron & bumper assembly complete with DOT approved LED lighting
- Mid body LED turn signal lights
- 3 Micron filtration inside steel tank with dual sight/temp gauge & air breather
- Dual hoist maintenance/safety props
- Warranty: Limited lifetime on frame & 2-year limited on hydraulic system
- Customized engineering layouts

FEATURE	SINGLE AXLE	TANDEM AXLE
Hoist Main Frame	8" x 3" x 3/8" A500 grade C tubing	8" x 4" x 1/2" A500 grade C tubing
Hoist Subframe	4" x 3" x 1/4" A500 grade C tubing	3" x 2" x 3/16" (5/16" on U75 Models) A500 grade C tubing
Hydraulic Pump	Gear type 21 GPM @1,500 RPM (nominal)	Gear type 42 GPM @1,500 RPM (nominal)
Operating Pressure	1,850 PSI	1,850 PSI (1,950 PSI on U75 Models)
Hydraulic Valve	2 Spool / 25 GPM w/ safety bypass	2 Spool / 45 GPM w/ safety bypass
Oil Reservoir	20-gallon steel tank w/ internal 3 micron return filtration	50-gallon steel tank w/ internal 3 micron return filtration
Lift Cylinders	(2) Dual acting rod type	(2) Dual acting rod type (3-stage tel. - UT/UH/U75T)
Hinge Shaft	1 1/2" Solid steel	2 1/2" Solid steel
Winch Cylinders	(2) Dual acting rod type	(2) Dual acting rod type
Cable / Cable End	5/8" Steel cable / Pear Eye Cable End	7/8" Steel cable / swivel cable end w/ bail latch
Cable Sheaves	10" Grease grooved	10" Grease grooved
Cable Anchors	(4) Cable clamps	(4) Cable clamps
Front Stops	1 1/2" Steel plate	1 1/2" Steel Plate
Front Safety Lock	Automatic spring loaded	Automatic spring loaded
Rear Hold Downs	1" Steel plate located for std. Wastequip ROC	1" Steel plate located for std. Wastequip ROC
Outside Rollers	4" O.D. with bronze bearings	4" O.D. with bronze bearings
Inside Rail Rollers	6" O.D. with bronze bearings	6" O.D. with bronze bearings
Inside Rail	1/2" Angle Steel	1/2" Angle Steel
ICC Bumper	Auto fold air assist	Auto fold air assist



4" O.D. side rollers w/ bronze bushings; outboard supported standard 75,000 lbs and up models



Outside frame rail stationary rear container hold downs



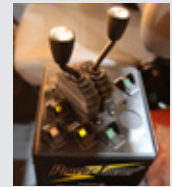
Air assist auto folding ICC bumper



Heavy duty rear apron w/ split bumpers & recessed LED lighting



50-gallon steel hydraulic tank side mounted w/ dual sight/ temp gauge



Inside air controls in power tower or integrated into center console on cab over trucks; Secondary outside manual controls at main control valve



Heavy duty cast ductile iron rear hinge



Signal light in cab



1/2" Inside rail container guide



6" O.D. Inside rail rollers

Available Options

- Pioneer® tarping systems
- Tarp and control valve mounting platform
- Steel, aluminum or poly fenders
- Toolbox styles and sizes (steel, aluminum)
- Rear window screen protection
- Lift axles (steer and non-steer)
- Reverse mount lift cylinders (standard on single axle models)
- Telescopic lift cylinders (standard on UT & UH hoist models)
- Auxiliary hydraulic hook ups and wet kits
- Pintle hooks and towing applications
- Auxiliary container stops and hold downs
- Rear wing skid plates with full support
- Hard plumbing
- Various cable ends
- Safety and additional LED work lighting
- Speed limiting parameters for hoist up and ground speed
- Scale systems
- Back-up camera systems



Pioneer® tarping systems



Pintle hooks and wet kits for towing applications



Toolbox styles and sizes (steel, aluminum)



Steel, aluminum or poly fenders



LED work lights



Back-up camera system



Outboard supported side rollers (standard on 75k lb. and up models)



Telescopic lift cylinders



Lift axles (steer and non-steer)



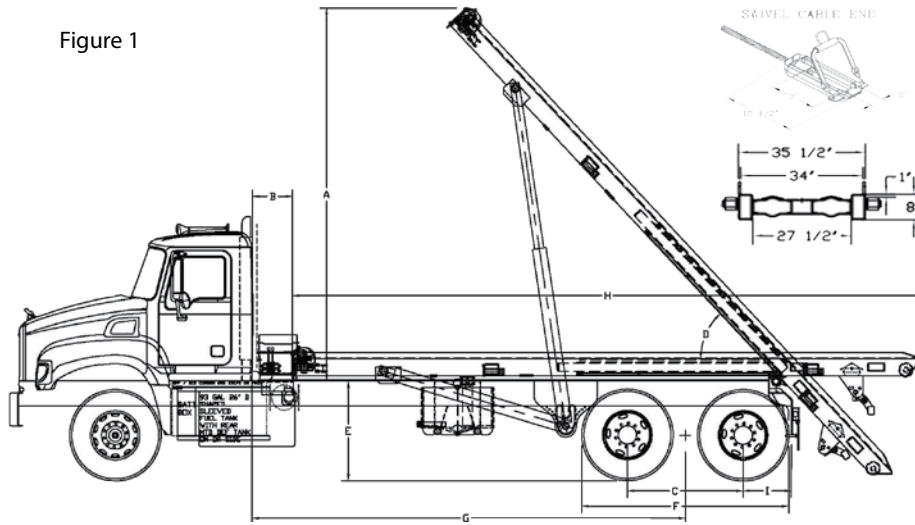
Rear wing skid plates

U5-IO-174 shown with a Pioneer® RP4500SARG Tarp System, 13k lb. lift axle, tri-axle poly fenders, hi-vis safety light package, wet kit, rear ratchet hold downs and fire extinguisher options



IO-Models

Figure 1



Notes for chart below

- 1) When recommending container lengths, weight distribution, fender interference and overhang are factors. Please consult your local ordinances when determining the model of hoist needed to suit your container needs.
- 2) Factory tested with recommended container length and water level load.
- 3) Frame Height = top of truck chassis frame to ground. Using 22.5" tires only. For larger tires, consult engineering for clearance.
- 4) This distance does not allow for a behind the cab (BTC) oil reservoir, tarper platform and or room to add a tarper; must add distance for those items.
- 5) Request additional tail length for spring suspensions higher than 45"; see chart 1 for reference.

Specifications	SINGLE AXLE	TANDEM AXLE	TANDEM AXLE	TANDEM AXLE	TANDEM AXLE	TANDEM AXLE
	U3-IO-156	U4-IO-174	U5-IO-174	UT-IO-174	U5-IO-194	UT-IO-194
Recommended Container Size ¹	14' to 18'	18' to 22'	18' to 22'	18' to 22'	20' to 24'	20' to 24'
Rated Hoist Capacity ²	30,000 lbs.	40,000 lbs.	60,000 lbs.	60,000 lbs.	60,000 lbs.	60,000 lbs.
A – Height above truck frame ^{3,5}	157 1/2"	163 1/2"	163 1/2"	163 1/2"	181 7/8"	181 7/8"
B – Back of cab to hoists ⁴	6"	6"	6"	6"	6"	6"
C – Axle spread	n/a	51" - 60"	51" - 60"	51" - 60"	51" - 60"	51" - 60"
D – Raised Dump Angle ^{3,5}	51°	47°	47°	47°	47°	47°
E – Top of truck frame to ground ^{3,5}	42"	44"	44"	44"	44"	44"
F – Tire O.D. to O.D.	n/a	101" max	101" max	101" max	101" max	101" max
G – Cab to axle (CA), Cab to trunnion (CT)⁴ (add 12" for tarper and hard plumbing)	156"	174"	174"	174"	194"	194"
H – Hoist Length	246"	280"	280"	280"	299"	299"
I – After Frame (add 2" for air ride)	37 1/4"	25"	25"	25"	25"	25"
Lift Cylinders (reverse mount on single axle models are standard; telescopic cylinders standard on UT/UH models)	5"x 3"x 54"	6"x 4"x 72"	6"x 4"x 72"	6-5-4 x 118"	6"x 4"x 72"	6-5-4 x 118"
Winch Cylinders	5"x 3"x 66"	6"x 3"x 80"	7"x 4"x 80"	7"x 4"x 80"	7"x 4"x 90"	7"x 4"x 90"
Approximate weight with standard features (ship out weight used; unmounted)	6,110 lbs.	7,250 lbs.	7,250 lbs.	7,250 lbs.	7,550 lbs.	7,550 lbs.

Minimum Truck Requirements (Single Axle) - U3-Models

Axle rating: 9,000 front / 24,400 rear
Transmission torque: 212 ft. lbs.

*The chart below is an example of how to calculate the chassis section modulus (RBM/PSI = SM). Regardless of the frame YIELD and RBM, the min. SM must be 17.5 in³ or more per each frame rail.

Truck Channel Ht.	RBM	Yield (PSI)	RBM/PSI = SM in ³
10" or more (single wall)	2,100,000- 3,000,000	120,000 psi	17.5 in ³ - 25 in ³
10" or more (double wall)	1,750,000- 3,000,000	100,000 psi	17.5 in ³ - 30 in ³

Note: The single walled 120k psi with RBM less than 2,400,000 would not be acceptable because its SM would fall below the 17.5 in³ minimum specification (2,000,000/120,000 = 16.67 in³). For frames less than 10" consult engineering.

Minimum Truck Requirements (Tandem Axle)

Axle rating: 18,000 front / 44,000 rear
Transmission torque: 261 ft. lbs..

*The chart below is an example of how to calculate the chassis section modulus (RBM/PSI = SM). Regardless of the frame YIELD and RBM, the min. SM must be 20 in³ or more per each frame rail.

Truck Channel Ht.	RBM	Yield (PSI)	RBM/PSI = SM in ³
10" or more (single wall)	2,400,000- 4,000,000	120,000 psi	20 in ³ - 33.3 in ³
10" or more (double wall)	2,000,000- 4,000,000	100,000 psi	20 in ³ - 40 in ³

Note: The single walled 120k psi with RBM less than 2,400,000 would not be acceptable because its SM would fall below the 20 in³ minimum specification (2,300,000/120,000 = 19.17 in³). For frames less than 10" consult engineering.

TRUCK FRAME HEIGHT & TAIL LENGTH CHART

Frame Height (Inches)		Tail Length measured from center of rear hinge to tip of tail	
MIN.	MAX.	Added Length	Total Length
42"	44 ½"	0 inches - Std.	69 ¾"
45"	47 ½"	4"	73 ¾"
48"	50 ½"	8"	77 ¾"
51"	53 ½"	12"	81 ¾"
54"	56 ½"	16"	85 ¾"

Round to the nearest inch

Chart 1

Cycle Times @ 1,850 PSI & 1,500 RPM

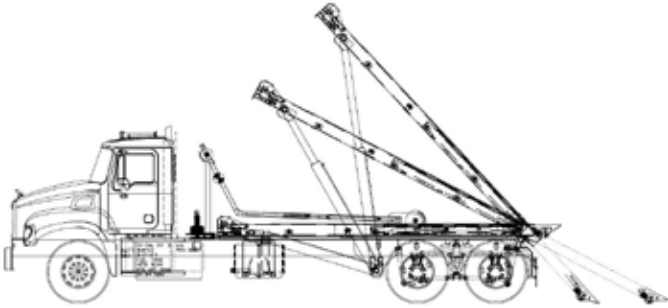
Hoist Up -	30 sec.
Hoist Down -	15 sec.
Winch On -	34 sec.
Winch Off -	19 sec.

*U5-IO-174 theoretical times shown

TANDEM AXLE	TANDEM AXLE	TANDEM AXLE	TANDEM AXLE
U75-IO-174	U75T-IO-174	U75-IO-194	U75T-IO-194
18' to 22'	18' to 22'	20' to 24'	20' to 24'
75,000 lbs.	75,000 lbs.	75,000 lbs.	75,000 lbs.
163 ½"	163 ½"	181 7/8"	181 7/8"
6"	6"	6"	6"
51" - 60"	51" - 60"	51" - 60"	51" - 60"
47°	47°	47°	47°
44"	44"	44"	44"
101" max	101" max	101" max	101" max
174"	174"	194"	194"
280"	280"	299"	299"
25"	25"	25"	25"
7"x 4"x 72"	6-5-4 x 118"	7"x 4"x 72"	6-5-4 x 118"
7"x 4"x 80"	7"x 4"x 80"	7"x 4"x 90"	7"x 4"x 90"
7,760 lbs.	7,760 lbs.	8,060 lbs.	8,060 lbs.

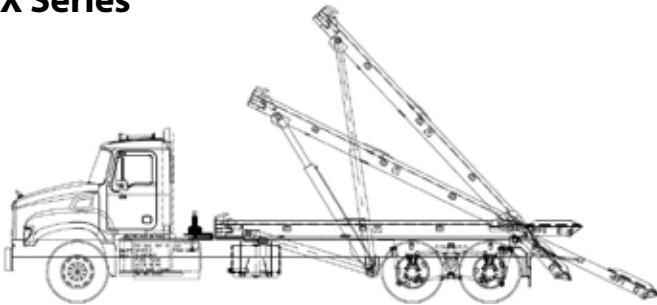
Extendable Tail Models

EX Series



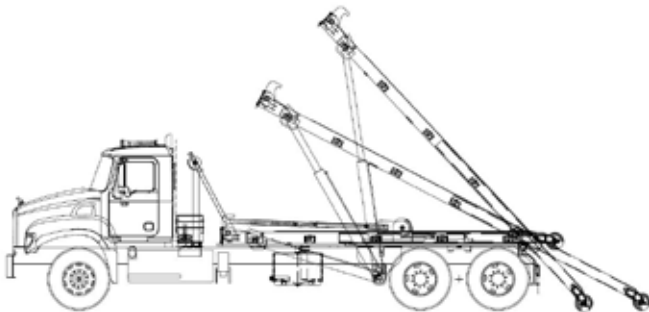
Essentially a shortened OR-model with a 80" extendable tail section that generates low loading angles and has 35.5 inch rail width.

IX Series



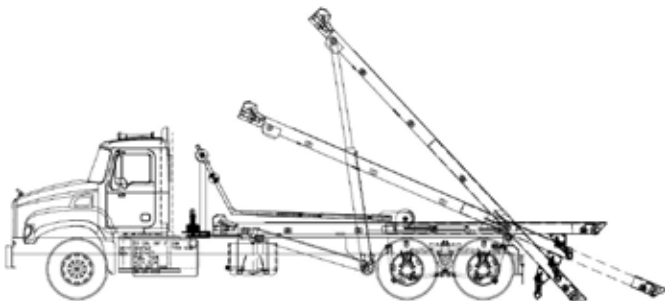
An OR/EX-model extendable tail (60") with both inside and outside rails and rollers. The hoist has set rail widths of 35.5 inches.

EH Series



A combination of an EX & HH-model, designed for picking up dead lift containers at low loading angles with an 80" extendable tail section. This hoist has a narrower rail width set at 35 inches.

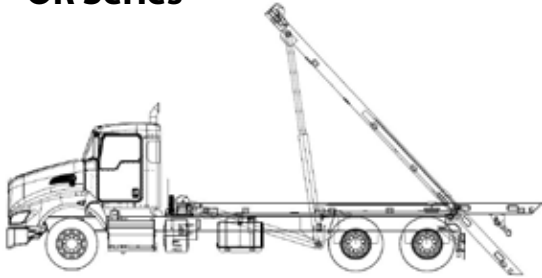
OX Series



An OR-style hoist with a tail that is extendable out to an additional 48". The hoist has set rail widths of 35.5 inches.

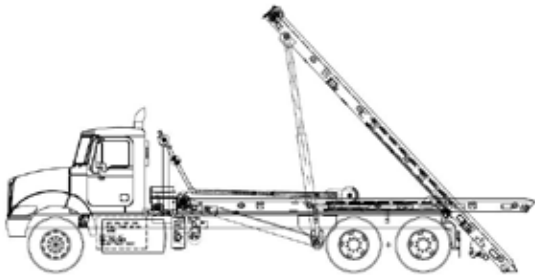
Fixed Tail Models

OR Series



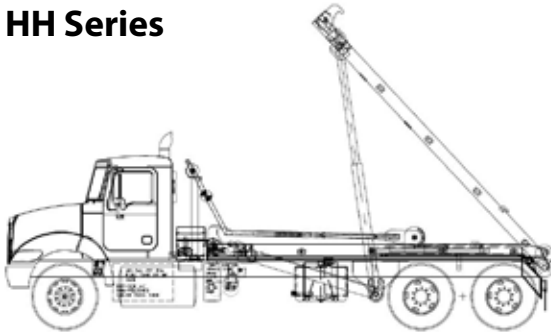
The OR-model (industry standard) is an outside/inside rail and roller hoist set at 35.5 inches wide between rails.

IO Series



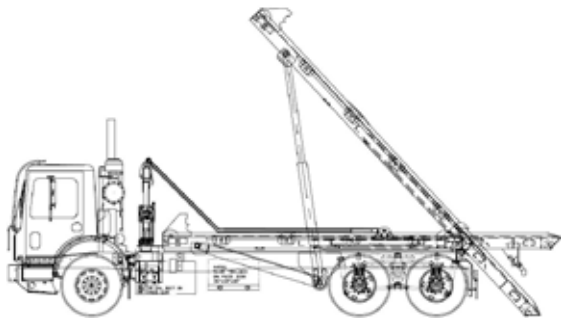
Similar to the OR-model, the IO-model has additional inside rollers (inside of main frame tubes) and inside rails fixed to the top of main frame. The hoist is set at 35.5 inches wide between rails.

HH Series



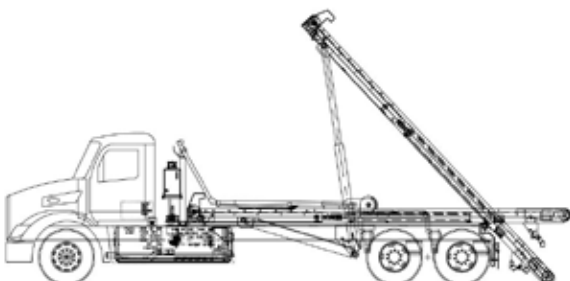
HH - A shortened and narrowed version of the OR-model that is designed to pick up deadlift containers with a knuckle cable end. The hoist rails are set at 35 inches wide.

SI Series



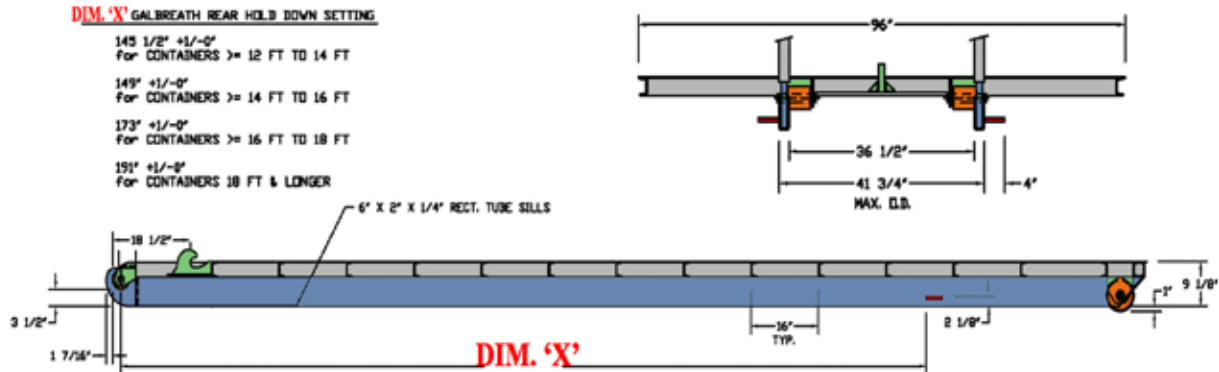
A cross breed of sorts, the SI-model is unique in the fact that it is designed to pick up a variety of different styles of containers. Specifically, it will pick up either outside rail, inside/outside rail and deadlift containers. The hoist is set at 35 inches.

TM Series



A representative of a unique market sector of the Pacific Northwest, the TM-model (Trough Mount) is typically a hoist that utilizes a trough section on either side to support the containers as opposed to rollers or rails. Many different variations exist for its dimensions and can be adapted to suit most consumer requirements.

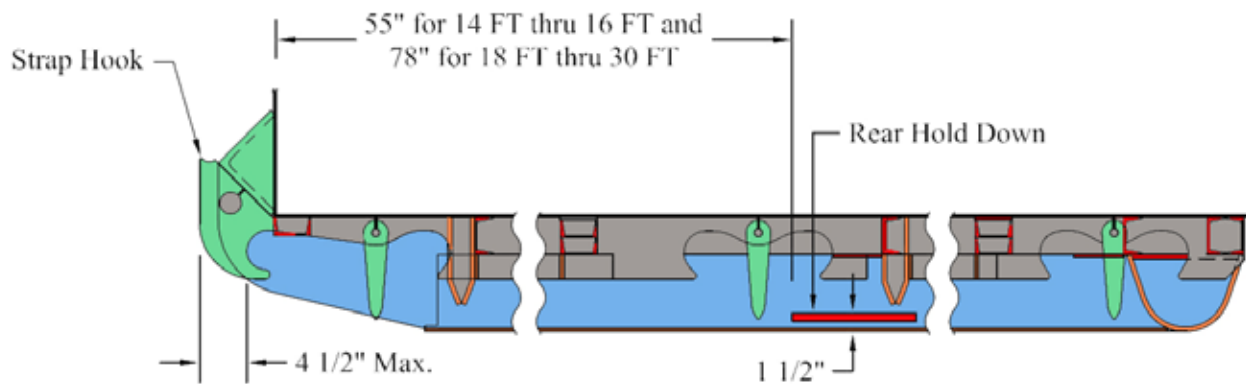
OUTSIDE RAIL CONTAINER REQUIREMENTS



*NOTE: For use with 10' containers, the hold down system will require other means such as ratchet type hold downs.

INSIDE RAIL CONTAINER REQUIREMENTS

33 1/4" O.D. Long Sills



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