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Low Profile Skidding Systems

XLP30 EXTREME LOW PROFILE SKIDDING SYSTEM



Innovation

Hydra-Slide has identified a gap in the traditional load-moving equipment available in the industrial market. There is a need for a reliable, safe method of moving loads in the range of 30 tons and under.

Pump carts, dollies, and forklifts are typically insufficient for the task, whereas gantries, cranes, and traditional skidding systems are expensive to mobilize, and oversized for this type of work. The result is often makeshift, untested methods using rollers, ropes and pulleys, or overloaded dollies – solutions that can be unpredictable and dangerous for both commodity and crew.

The XLP30 Skidding System bridges the gap so contractors can safely and efficiently move lighter loads with control and accuracy. The XLP30 is simple, user-friendly, and versatile - and like every Hydra-Slide system, it is **designed with the rigger in mind.** The XLP30 features a 1.125" (29mm) profile, is completely hand-portable, requires limited jacking, and can push or pull up to 30 tons (27 tonnes).

- Simple switch from push to pull mode
- Ideal for limited clearance/access
- Low-maintenance steel-UHMW slide surface
- Cylinders automatically reset, keeping crew members at a safe distance



XLP30 EXTREME LOW PROFILE SKIDDING SYSTEM

XLP30 Specifications	
Skidding Push Capacity*	30 ton 27 tonne
Skidding Pull Capacity*	30 ton 27 tonne
Skidding System Height	1.125" 29 mm
Cylinder Capacity - Push	10 ton 9 tonne
Cylinder Capacity - Pull	5 ton 4.5 tonne
Cylinder Push/Pull Stroke	10" 254 mm
Cylinder Hydraulic I Couplers	Enerpac CR400 (female)
System Coefficient of Friction	10-15%
Surface Material UHMW	Polyethylene
Maximum Slope	+/- 2%
Alignment Tolerance	+/-0.25" +/- 6 mm
Max. Operating Pressure	10,000 psi 700 bar

*Based on standard system with (2) cylinders



Full system is stored in a compact steel box for convenience & easy transportation

XLP30 Dimensions	Length	Width	Height	Weight
Track Section	56"	6.0"	1.0"	42 lb
	1.42 m	150 mm	25 mm	19 kg
Slider Plate - 2'	24"	3.75"	0.375"	8.9 lb
	610 mm	95 mm	10 mm	4.0 kg
Slider Plate - 4'	48"	3.75"	0.375"	18.6 lb
	1.22 m	95 mm	10 mm	8.4 kg
Push/Pull Head	18"	3.75"	4"	11 lb
	460 mm	95 mm	100 mm	5.0 kg
Cylinder Assembly	18"	6"	7"	65 lb
	460 mm	150 mm	180 mm	29 kg
Full System	59"	39"	29"	1150 lb
in Storage Box	1.50 m	990 mm	740 mm	518 kg



HYDRAULIC SKIDDING SPEED

XLP30 Extreme Low Profile Skidding System

Hydraulic Cylinder Type	Powerteam RD1010
Effective Stroke Length	8" / 205mm
Cylinder Extend Volume	22.3 in³ / 0.365 L
Cylinder Retract Volume	8.8 in³ / 0.144 L

Conventional Power Units

		CPU-1-2E	CPU-3-2E	CPU-4E	CPU-2G	CPU-4G
Hydrauli	c Pump	ZE3	ZE5	ZE6	ZG5	ZG6
Rated	hp	1.0	3.0	7.5	4.0	10.0
power	k₩	0.75	2.2	5.6	3.0	7.5
Total	in³/min	40*	120*	200*	100*	200*
Output	L/min	0.7*	2.0*	3.3*	1.6*	3.3*
Output	in ³ /min	20*	60*	100*	50*	100*
per Port†	L/min	0.33*	1.0*	1.6*	0.82*	1.6*
Cycle		7/	20	20	77	20
Time‡	sec	74	LJ	20	00	20
Skidding	ft/hour	33	86	127	74	127
Speed	m/hour	10.1	26.2	38.7	22.6	38.7

* These are two-stage pumps; at pressures less than ~1000 psi (70 bar) the flow rate is significantly higher (typically only seen when cylinders are extended/retracted without load.)

[†] Values shown assume (2) hydraulic cylinders in operation

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

Synchronous Power Units

		SPU-4D	SPU-6D/ SPU-8D	SPU-4E	SPU-6E	SPU-8E
Hydraulic Pump		PF1002	PF1002 x 2	PF1002	PF4011	PF4011
Rated	hp	23.0	50.0	15.0	30.0	40.0
power	k₩	17.2	37.3	11.2	22.4	29.8
Output	in ³ /min	115	115	115	203	203
per Port	L/min	1.9	1.9	1.9	3.3	3.3
Cycle		21	21	21	14	14
Time*	560					
Skidding	ft/hour	113	113	113	169	169
Speed	m/hour	34.4	34.4	34.4	51.5	51.5
With Paired	ft/hour	226	226	226	338	338
Ports [†]	m/hour	68.9	68.9	68.9	103	103

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

[†] Synchronous power units feature valves that allow each pair of ports to be combined into a single output, effectively doubling the oil flow rate

XLP150 EXTREME LOW PROFILE SKIDDING SYSTEM





The XLP150 one of the most versatile skidding systems ever designed. It is completely hand-portable and is ideal for confined work spaces, indoor applications such as hospitals and laboratories - anywhere a clean, self-contained and compact system is essential. It performs just as well in harsh environments or underground.

- Simple switch from push to pull mode
- Ideal for limited clearance/access
- Low-maintenance steel-UHMW slide surface
- Cylinders automatically reset
- Stamped, engineered assembly drawings provided



XLP150 EXTREME LOW PROFILE SKIDDING SYSTEM



XLP150 Specifications	
Skidding Push Capacity*	250 ton 227 tonne
Skidding Pull Capacity*	150 ton 136 tonne
Skidding System Height	1.25" 32 mm
Cylinder Capacity - Push	30 ton 27 tonne
Cylinder Capacity - Pull	12.5 ton 11.5 tonne
Cylinder Push/Pull Stroke	14.25" 362 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
System Coefficient of Friction	10-15%
Slide Surface Material UHN	M Polyethylene
Maximum Slope	+/- 2%
Track Alignment Tolerance	+/-0.25" +/- 6 mm
Maximum Operating Pressure	10,000 psi 700 bar

*Based on standard system with (2) cylinders

XLP150 Dimensions	Length	Width	Height	Weight
Track Section	60"	15.25"	1.125"	65 lb
	1.52 m	390 mm	29 mm	29 kg
Slider Plate - 1'	12"	7.75"	0.375"	7.5 lb
	300 mm	200 mm	10 mm	3.4 kg
Slider Plate - 2'	24"	7.75"	0.375"	17.5 lb
	610 mm	200 mm	10 mm	7.9 kg
Slider Plate - 4'	48"	7.75"	0.375"	40 lb
	1.22 m	200 mm	10 mm	18 kg
Push/Pull Head	19"	7.75"	6.5"	31 lb
	483 mm	200 mm	165 mm	14 kg
Cylinder Assembly	26"	7.75"	8"	80 lb
	660 mm	200 mm	203 mm	36 kg
Full System	76"	48"	31"	2090 lb
in Storage Box	1.93 m	1.22 m	790 mm	948 kg



Full system is stored in a compact steel box for convenience & easy transportation

EXTREME OW PROFILE SKIDDING SYSTEM

The XLP150 presented a myriad of safety and productivity advantages."

T-7 B-LINE EL-604

-Bill Watts, Edwards Moving & Rigging

PROJECT

Edwards Moving & Rigging used their XLP150 skidding system to remove and replace small transformers inside a high-security power plant in the southeastern US.

The work site presented numerous challenges - low headroom, a confined workspace, and no forklift access - making the hand-portable and compact XLP150 an ideal solution.

Credit: Edwards Moving & Rigging, Kentucky, USA 2018

HYDRAULIC SKIDDING SPEED

XLP150 Skidding System

Hydraulic Cylinder Type	HS3014
Effective Stroke Length	12" / 305mm
Cylinder Extend Volume	92.7 in³ / 1.52 L
Cylinder Retract Volume	43.0 in³ / 0.70 L

Conventional Power Units

		CPU-1-2E	CPU-3-2E	CPU-4E	CPU-2G	CPU-4G
Hydrauli	c Pump	ZE3	ZE5	ZE6	ZG5	ZG6
Rated	hp	1.0	3.0	7.5	4.0	10.0
power	k₩	0.75	2.2	5.6	3.0	7.5
Total	in³/min	40*	120*	200*	100*	200*
Output	L/min	0.7*	2.0*	3.3*	1.6*	3.3*
Output	in ³ /min	20*	60*	100*	50*	100*
per Port†	L/min	0.33*	1.0*	1.6*	0.82*	1.6*
Cycle		205	10/	88	19/	66
Time‡	sec	290	104	00	124	00
Skidding	ft/hour	12	35	54	29	54
Speed	m/hour	3.7	10.4	16.3	8.8	16.3

* These are two-stage pumps; at pressures less than ~1000 psi (70 bar) the flow rate is significantly higher (typically only seen when cylinders are extended/retracted without load.)

[†] Values shown assume (2) hydraulic cylinders in operation

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

Synchronous Power Units

		SPU-4D	SPU-6D/ SPU-8D	SPU-4E	SPU-6E	SPU-8E
Hydraulic	Pump	PF1002	PF1002 × 2	PF1002	PF4011	PF4011
Rated	hp	23.0	50.0	15.0	30.0	40.0
power	k₩	17.2	37.3	11.2	22.4	29.8
Output	in ³ /min	115	115	115	203	203
per Port	L/min	1.9	1.9	1.9	3.3	3.3
Cycle		76	76	76	/15	45
Time*	560	70	70	70	40	40
Skidding	ft/hour	47	47	47	80	80
Speed	m/hour	14.3	14.3	14.3	24.0	24.0
With Paired	ft/hour	95	95	95	160	160
Ports [†]	m/hour	28.6	28.5	28.5	48.1	48.1

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

[†] Synchronous power units feature valves that allow each pair of ports to be combined into a single output, effectively doubling the oil flow rate

LP350 LOW PROFILE SKIDDING SYSTEM





The LP350 is our workhorse low-profile skidding system. Engineered for function and convenience, the LP350 has a durable graphite slide surface and a working height of 1.5" (38mm).

- Capable of pushing loads up to 350 tons (318 tonnes)
- Quick & simple track connections
- Durable graphite slide surface
- Cylinders automatically reset
- Stamped, engineered assembly drawings provided



LP350 LOW PROFILE SKIDDING SYSTEM

LP350 Specifications

Skidding Push Capacity*	350 ton 318 tonne
Working Height	1.5" 38 mm
Cylinder Capacity	30 ton 27 tonne
Cylinder Push/Pull Stroke	14.25" 362 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
System Coefficient of Friction	15-20%
Slide Surface Material	Graphite
Maximum Slope	+/- 2%
Track Alignment Tolerance	+/- 0.25" +/- 6 mm
Maximum Operating Pressure	10,000 psi 700 bar





Width Width **LP350 Dimensions** Length Height Weight (working) (incl. handles) 72" 12" 20" 1" 120 lb Track Section 305 mm 508 mm 1.83 m 25 mm 54 kg 48" 12" 20" 1" 125 lb Slider Plate 1.22 m 305 mm 508 mm 25 mm 56 kg 27" 6.5" 6.5" 9" 100 lb Cylinder Assembly 690 mm 170 mm 170 mm 230 mm 45 kg 76" 48" 48" 31" 3750 lb Full System in Storage Box 1.93 m 1.22 m 1.22 m 790 mm 1700 kg

*Based on standard system with (2) push cylinders



Full system is stored in a compact steel box for convenience & easy transportation

LP350 LOW PROFILE SKIDDING SYSTEM

A GOOD FIT

The LP350 represents the continued evolution of the low-profile range that also includes the XLP150 extreme low profile system.

In contrast to their heavy track counterparts, these products are completely hand-portable, compact and ideal for use in areas with limited access or clearance.

> We were very pleased with the [Hydra-Slide] system. We have a history stretching back 50 years—principally in Sweden but around the world too—and a hallmark of the company has always been innovation and development of our equipment fleet. The LP350 fits with that overarching theme."

> > -Joakim Andersson, Jinert

Credit: Sven Jinert AB, Hässleholm, Sweden 2020

HYDRAULIC SKIDDING SPEED

LP350 Skidding System

Hydraulic Cylinder Type	HS3014
Effective Stroke Length	12" / 305mm
Cylinder Extend Volume	92.7 in³ / 1.52 L
Cylinder Retract Volume	43.0 in³ / 0.70 L

Conventional Power Units

		CPU-1-2E	CPU-3-2E	CPU-4E	CPU-2G	CPU-4G
Hydrauli	c Pump	ZE3	ZE5	ZE6	ZG5	ZG6
Rated	hp	1.0	3.0	7.5	4.0	10.0
power	k₩	0.75	2.2	5.6	3.0	7.5
Total	in ³ /min	40*	120*	200*	100*	200*
Output	L/min	0.7*	2.0*	3.3*	1.6*	3.3*
Output	in ³ /min	20*	60*	100*	50*	100*
per Port†	L/min	0.33*	1.0*	1.6*	0.82*	1.6*
Cycle		205	10/	88	19/	66
Time‡	sec	290	104	00	124	00
Skidding	ft/hour	12	35	54	29	54
Speed	m/hour	3.7	10.4	16.3	8.8	16.3

* These are two-stage pumps; at pressures less than ~1000 psi (70 bar) the flow rate is significantly higher (typically only seen when cylinders are extended/retracted without load.)

[†] Values shown assume (2) hydraulic cylinders in operation

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

Synchronous Power Units

		SPU-4D	SPU-6D/ SPU-8D	SPU-4E	SPU-6E	SPU-8E
Hydraulic	Pump	PF1002	PF1002 × 2	PF1002	PF4011	PF4011
Rated	hp	23.0	50.0	15.0	30.0	40.0
power	k₩	17.2	37.3	11.2	22.4	29.8
Output	in ³ /min	115	115	115	203	203
per Port	L/min	1.9	1.9	1.9	3.3	3.3
Cycle		76	76	76	/15	45
Time*	560	70	70	70	40	40
Skidding	ft/hour	47	47	47	80	80
Speed	m/hour	14.3	14.3	14.3	24.0	24.0
With Paired	ft/hour	95	95	95	160	160
Ports [†]	m/hour	28.6	28.5	28.5	48.1	48.1

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

[†] Synchronous power units feature valves that allow each pair of ports to be combined into a single output, effectively doubling the oil flow rate

Heavy Track Skidding Systems

HT300 HEAVY TRACK SKIDDING SYSTEM





The HT300 features rigid steel tracks designed to carry loads over unsupported spans, is engineered to push loads up to 300 tons (270 tonnes), and has a working height of only 7" (180 mm).

- Quick & simple track connections
- Designed to both push and pull
- Durable graphite slide surface
- Cylinders automatically reset
- Stamped, engineered assembly drawings and capacity charts provided



HT300 HEAVY TRACK SKIDDING SYSTEM



HT300 Specifications	
Skidding Push Capacity*	300 ton 270 tonne
Skidding Pull Capacity*	150 ton 135 tonne
Working Height	7" 180 mm
Cylinder Capacity - Push	30 ton 27 tonne
Cylinder Capacity - Pull	15 ton 13.5 tonne
Cylinder Push/Pull Stroke	14.25" 362 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
Skid Shoe Capacity	75 ton 67.5 tonne
System Coefficient of Friction	15-20%
Slide Surface Material	Graphite
Maximum Slope	+/- 2%
Track Alignment Tolerance	+/- 0.25" +/- 6 mm
	10.000 psi

*Based on standard system with (2) cylinders & (4) skid shoes

HT300 Dimensions	Length	Width*	Height	Weight
20' Track Section	20'	16"	6.25"	2500 lb
	6.10 m	406 mm	160 mm	1134 kg
19' Track Section	19'	16"	6.25"	2375 lb
	5.80 m	406 mm	160 mm	1077 kg
15' Track Section	15'	16"	6.25"	1875 lb
	4.57 m	406 mm	160 mm	850 kg
12' Track Section	12'	16"	6.25"	1500 lb
	3.66 m	406 mm	160 mm	680 kg
10' Track Section	10'	16"	6.25"	1250 lb
	3.05 m	406 mm	160 mm	567 kg
HT300 Skid Shoe	26"	17"	6"	165 lb
	660 mm	430 mm	150 mm	75 kg
Storage Rack with shoes and blocks	41"	39"	33"	940 lb
	1040 mm	990 mm	840 mm	426 kg
Storage Box	42"	34"	22"	1000 lb
with components	1.07 m	860 mm	560 mm	454 kg

*Listed track widths are effective width; full width including lifting lugs is 18.5" (470mm)



All system components are stored in a compact steel box for convenience & easy transportation

HT300 HEAVY TRACK SKIDDING SYSTEM

PROJECT

Skidding two boilers inside an operational paper mill

SCOPE

- Boilers arrived on site by rail
- Transferred from rail to Hydra-Slide HT300 using 550-ton crane
- Transversed 60 m under existing pipe gallery and through an alleyway into the new boiler area

"We looked at beams and dollies, plate and dollies, multi-line transporters, etc.

None of these options could deliver a complete solution to the dimensional constraints, safety & engineering concerns, speed and control discussions nor the ease of use and functionality.

In short, we needed a solution that was pre-engineered, simple in design and effective regardless of weather conditions."

Jason Walker, AME Inc.

With just inches to spare on all sides, the Hydra-Slide equipment was chosen for its low profile & simple mobilization

> Photo Credit: AME Inc. North Carolina, 2016

HYDRAULIC SKIDDING SPEED

HT300 Skidding System

Hydraulic Cylinder Type	HS3014
Effective Stroke Length	12" / 305mm
Cylinder Extend Volume	92.7 in³ / 1.52 L
Cylinder Retract Volume	43.0 in³ / 0.70 L

Conventional Power Units

		CPU-1-2E	CPU-3-2E	CPU-4E	CPU-2G	CPU-4G
Hydrauli	c Pump	ZE3	ZE5	ZE6	ZG5	ZG6
Rated	hp	1.0	3.0	7.5	4.0	10.0
power	k₩	0.75	2.2	5.6	3.0	7.5
Total	in³/min	40*	120*	200*	100*	200*
Output	L/min	0.7*	2.0*	3.3*	1.6*	3.3*
Output	in ³ /min	20*	60*	100*	50*	100*
per Port†	L/min	0.33*	1.0*	1.6*	0.82*	1.6*
Cycle		205	10/	88	19/	66
Time‡	sec	290	104	00	124	00
Skidding	ft/hour	12	35	54	29	54
Speed	m/hour	3.7	10.4	16.3	8.8	16.3

* These are two-stage pumps; at pressures less than ~1000 psi (70 bar) the flow rate is significantly higher (typically only seen when cylinders are extended/retracted without load.)

[†] Values shown assume (2) hydraulic cylinders in operation

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

Synchronous Power Units

		SPU-4D	SPU-6D/ SPU-8D	SPU-4E	SPU-6E	SPU-8E
Hydraulic	Pump	PF1002	PF1002 × 2	PF1002	PF4011	PF4011
Rated	hp	23.0	50.0	15.0	30.0	40.0
power	k₩	17.2	37.3	11.2	22.4	29.8
Output	in ³ /min	115	115	115	203	203
per Port	L/min	1.9	1.9	1.9	3.3	3.3
Cycle		76	76	76	/15	45
Time*	560	70	70	70	40	40
Skidding	ft/hour	47	47	47	80	80
Speed	m/hour	14.3	14.3	14.3	24.0	24.0
With Paired	ft/hour	95	95	95	160	160
Ports [†]	m/hour	28.6	28.5	28.5	48.1	48.1

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

[†] Synchronous power units feature valves that allow each pair of ports to be combined into a single output, effectively doubling the oil flow rate

HT500 HEAVY TRACK SKIDDING SYSTEM





The HT500 features rigid steel tracks designed to carry loads over unsupported spans, is engineered to push loads up to 500 tons (454 tonnes), and has a working height of only 8" (205 mm).

- Quick & simple track connections
- Designed to both push and pull
- Durable graphite slide surface
- Cylinders automatically reset
- Stamped, engineered assembly drawings and capacity charts provided



T500 EAVY TRACK SKIDDING SYSTEM Η



HT500 Specifications	
Skidding Push Capacity*	500 ton 454 tonne
Skidding Pull Capacity*	250 ton 227 tonne
Working Height	8" 205 mm
Cylinder Capacity - Push	55 ton 50 tonne
Cylinder Capacity - Pull	28 ton 25 tonne
Cylinder Push/Pull Stroke	13" 330 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
Cylinder Hydraulic Couplers Skid Shoe Capacity	Enerpac CR400 (female) 125 ton 113.5 tonne
Cylinder Hydraulic Couplers Skid Shoe Capacity System Coefficient of Friction	Enerpac CH400 (female) 125 ton 113.5 tonne 15-20%
Cylinder Hydraulic Couplers Skid Shoe Capacity System Coefficient of Friction Slide Surface Material	Enerpac CH400 (female) 125 ton 113.5 tonne 15-20% Graphite
Cylinder Hydraulic Couplers Skid Shoe Capacity System Coefficient of Friction Slide Surface Material Maximum Slope	Enerpac CH400 (female) 125 ton 113.5 tonne 15-20% Graphite +/- 2%
Cylinder Hydraulic Couplers Skid Shoe Capacity System Coefficient of Friction Slide Surface Material Maximum Slope Track Alignment Tolerance	Enerpac CH400 (female) 125 ton 113.5 tonne 15-20% Graphite +/- 2% +/- 0.25" +/- 6 mm

*Based on standard system with (2) cylinders & (4) skid shoes

HT500 Dimensions	Length	Width*	Height	Weight
20' Track Section	20'	17.5"	7"	3460 lb
	6.10 m	445 mm	180 mm	1569 kg
19'-2" Track Section	19'-2"	17.5"	7"	3270 lb
	5.84 m	445 mm	180 mm	1483 kg
15' Track Section	15'	17.5"	7"	2590 lb
	4.57 m	445 mm	180 mm	1175 kg
12'-6" Track Section	12'-6"	17.5"	7"	2075 lb
	3.81 m	445 mm	180 mm	941 kg
10' Track Section	10'	17.5"	7"	1730 lb
	3.05 m	445 mm	180 mm	785 kg
HT500 Skid Shoe	24"	18"	6"	200 lb
	610 mm	460 mm	150 mm	91 kg
Storage Rack with shoes and blocks	41"	39"	33"	1030 lb
	1040 mm	990 mm	840 mm	467 kg
Storage Box	42"	34"	22"	1020 lb
with components	1070 mm	860 mm	560 mm	463 kg



All system components are stored in a steel box for convenience & easy transportation

*Listed track widths are effective width; full width including lifting lugs is 20" (508mm)

HT500 HEAVY TRACK SKIDDING SYSTEM

PROJECT

0

Emergency replacement of a failed transformer

The Hydra-Slide HT500 is often used for the relocation of power transformers, fluid/gas vessels, and transfer of large loads between rail and transport equipment.

The Hydra-Slide skidding systems are an integral part of many of these projects. They can be utilized to efficiently and safely move large loads in confined spaces and allow for precise placement and alignment of heavy loads."

Steve Hentrich, HWP Rigging

Photo Credit: HWP Rigging, Missouri, 2016

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HYDRAULIC SKIDDING SPEED

HT500 Skidding System

Hydraulic Cylinder Type	Powerteam RD5513
Effective Stroke Length	10" / 255mm
Cylinder Extend Volume	144.9 in³ / 2.37 L
Cylinder Retract Volume	73.9 in³ / 1.21 L

Conventional Power Units

		CPU-1-2E	CPU-3-2E	CPU-4E	CPU-2G	CPU-4G
Hydraulic Pump		ZE3	ZE5	ZE6	ZG5	ZG6
Rated	hp	1.0	3.0	7.5	4.0	10.0
power	k₩	0.75	2.2	5.6	3.0	7.5
Total	in³/min	40*	120*	200*	100*	200*
Output	L/min	0.7*	2.0*	3.3*	1.6*	3.3*
Output	in³/min	20*	60*	100*	50*	100*
per Port†	L/min	0.33*	1.0*	1.6*	0.82*	1.6*
Cycle		459	160	102	192	102
Time‡	sec		200	101	202	202
Skidding	ft/hour	7.0	19	29	16	29
Speed	m/hour	2.0	5.6	8.9	4.7	8.9

* These are two-stage pumps; at pressures less than ~1000 psi (70 bar) the flow rate is significantly higher (typically only seen when cylinders are extended/retracted without load.)

[†] Values shown assume (2) hydraulic cylinders in operation

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

Synchronous Power Units

		SPU-4D	SPU-6D/ SPU-8D	SPU-4E	SPU-6E	SPU-8E
Hydraulic	Pump	PF1002	PF1002 x 2	PF1002	PF4011	PF4011
Rated	hp	23.0	50.0	15.0	30.0	40.0
power	k₩	17.2	37.3	11.2	22.4	29.8
Output	in³/min	115	115	115	203	203
per Port	L/min	1.9	1.9	1.9	3.3	3.3
Cycle		110	110	110	70	70
Time*	Sec	115	115	115	70	70
Skidding	ft/hour	25	25	25	43	43
Speed	m/hour	7.6	7.6	7.6	13.0	13.0
With Paired	ft/hour	50	50	50	86	86
Ports [†]	m/hour	15.2	15.2	15.2	26.1	26.1

* Cycle time accounts for full extension, full retraction, and a reaction time of 5 seconds per cycle

[†] Synchronous power units feature valves that allow each pair of ports to be combined into a single output, effectively doubling the oil flow rate

HEAVY TRACK CROSSOVER SYSTEM



The Crossover system allows a 90° change of direction while skidding, without jacking the load or repositioning tracks and skid shoes.

Movement along either the x- or y-axis is accomplished by simply removing the guide rail within the shoe and positioning in the perpendicular direction. No heavy equipment is required, and there is no down-time during the direction change. Because the track lattice is built to a specific load footprint, it is primarily intended for applications where the item(s) being moved have consistent dimensions.

Crossover systems are available for both the HT300 and HT500 Heavy Track skidding systems, and work with our standard pin and lug connectors.

Base Skidding System	HT300	HT500
Crossover Track Length*	58.375" 1.48 m	52" 1.32 m
Crossover Track Width	58.375" 1.48 m	52" 1.32 m
Crossover Track Height	6.25" 160 mm	7" 180 mm
Crossover Track Weight	1130 lb 513 kg	1350 lb 612 kg

*Track lengths and crossover skid shoes are customizable to suit any spacing requirements



HT1000 TRI-RAIL SYSTEM





The HT1000 Tri-Rail is our highestcapacity stand-alone skidding system. Each track incorporates two cylinders for maximum push capacity, and the system's working height is just 8" (205 mm).

- Quick & simple track connections
- Designed to both push and pull
- Durable graphite slide surface
- Cylinders automatically reset
- Stamped, engineered assembly drawings and capacity charts provided



HT1000 TRI-RAIL SYSTEM





HT1000 Specifications	
Skidding Push Capacity*	1000 ton 907 tonne
Skidding System Height	8" 205 mm
Cylinder Capacity - Push	55 ton 50 tonne
Cylinder Capacity - Pull	28 ton 25 tonne
Cylinder Push/Pull Stroke	13" 330 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
Skid Shoe Capacity	250 ton 227 tonne
System Coefficient of Friction	15-20%
Slide Surface Material	Graphite
Maximum Slope	+/- 2%
Track Alignment Tolerance	+/- 0.25" +/- 6 mm
Maximum Operating Pressure	10,000 psi 700 bar

*Based on standard system with (4) cylinders & (4) skid shoes

HT1000 Dimensions	Length	Width	Height	Weight
20' Track Section	20'	34"	7"	5600 lb
	6.10 m	860 mm	180 mm	2560 kg
19'-2" Track Section	19'-2"	34"	7"	5367 lb
	5.84 m	860 mm	180 mm	2434 kg
15' Track Section	15'	34"	7"	4200 lb
	4.57 m	860 mm	180 mm	1905 kg
12'-6" Track Section	12'-6"	34"	7"	3360 lb
	3.81 m	860 mm	180 mm	1524 kg
10' Track Section	10'	34"	7"	2800 lb
	3.05 m	860 mm	180 mm	1270 kg
HT1000 Skid Shoe	40"	30.5"	6"	490 lb
	1.02 m	775 mm	150 mm	222 kg
Storage Box	42"	34"	22"	1000 lb
(two per system)	1.07 m	860 mm	560 mm	454 kg



All system components are stored in a steel box for convenience & easy transportation

-RAIL SYSTEM

1011 1011 10

PROJECT

Emergency replacement of a failed transformer

SCOPE

A 670-ton fully dressed transformer is skidded during a live site test in Oregon, USA. In the event of a failure, the rigging crew can quickly change out the transformer using their on-site HT1000 system.

> The HT1000 is our highestcapacity skidding system, providing exceptional loadmoving capability while maintaining a low profile.

Summun

11

This system can be mobilized in areas with restricted access, tight clearance, and ground conditions unsuitable for crane operation.

Credit: Bonneville Power Administration, Celilo Converter Station, Oregon, 2017

Specialized Hydraulic Equipment

JLS250 JACKING LOAD SHOES



Our JLS250 jacking load shoes are loadcompensating skid shoes designed to work with both our HT300 & HT500 skidding systems.

- Each shoe includes a 250-ton (227-tonne) double-acting lift cylinder
- Two pressure and two return ports allow parallel connection
- Universal shoe is compatible with both HT300 and HT500 systems
- Can be configured in 3- or 4-point suspension groupings for stability and load distribution

JLS250 shoes can be hydraulically connected with any number of other shoes to increase the total system capacity while maintaining equal load support and weight distribution.

JLS250 JACKING LOAD SHOES



Did you know?



When multiple hydraulic cylinders are used to support a load, it may be advantageous to connect the cylinders into 3 separate hydraulic groups, referred to as a 3-point suspension.

The cylinders within each group are connected in parallel, but each of the 3 groups is independent from each other.

To understand the concept, consider that a 3-legged stool will not wobble; each leg remains in contact with the floor. The legs form a *stability triangle*.

JLS250 Specifications			
Base Skidding System	HT300	HT500	
System Capacity (4 Shoes)	600 ton 544 tonne	1000 ton 907 tonne	
System Capacity (6 Shoes)	900 ton 816 tonne	1500 ton 1361 tonne	
System Capacity (8 Shoes)	1200 ton 1089 tonne	2000 ton 1814 tonne	
System Height (Retracted)	31.75" 805 mm	32.5" 825 mm	
Lift Cylinder Capacity	250 ton 227 tonne	250 ton 227 tonne	
Lift Cylinder Stroke	10" 255 mm	10" 255 mm	
Tilting Load Cap	+/- 5%	+/- 5%	
Push Cylinder Capacity	30 ton 27 tonne	55 ton 50 tonne	
Push Cylinder Stroke	14.25" 362 mm	13" 330 mm	
Skidding Speed*	90 ft/hr 27 m/hr	55 ft/hr 17 m/hr	
System Coefficient of Fi	riction 1	5-20%	
Slide Surface Material	Gro	aphite	
Maximum Slope	+/- 2%		
Track Alignment Toleran	ce +/-	- 0.25" - 6 mm	
Maximum Operating Pressu	ure 10 , <i>70</i>	000 psi 0 bar	
Hydraulic Groupings	3-Point	or 4-Point	

*Speed determined using Hydra-Pac SPU-4D

JLS250 Dimensions	
Weight (per shoe)	2100 lbs 953 kg
Length	66" 1680 mm
Width	24" 610 mm
Working Height - Retracted (HT300)	31.75" 805 mm
Working Height - Extended (HT300)	41.75" 1060 mm
Working Height - Retracted (HT500)	32.5" 825 mm
Working Height - Extended (HT500)	42.5" 1080 mm

HYDRAULIC TURNTABLES



Our engineered Turntables are extremely simple and low-maintenance, and they solve a big problem: rotating any heavy or oversized load accurately and efficiently, even in areas of restricted access or clearance.

- Capacity up to 900 tons (816 tonnes)
- Fully bidirectional rotating mechanism
- Cylinders automatically reset during rotation
- Low-maintenance graphite-grease contact surface
- Stamped, engineered assembly drawings provided

Like all Hydra-Slide skidding systems, Hydra-Slide's TT-series Turntables are designed with cylinders that self-reset into ratchets along the rotating plate.

This eliminates the need for pulleys, hold backs, winch lines, or other external forces acting on the load.

Our Turntables can also accommodate multiple push cylinders to increase system capacity.





HYDRAULIC TURNTABLES



Turntable Specifications	TT-6	TT-7.5	TT-8	TT-10
System Capacity	150 ton	225 ton/cyl.	250 ton/cyl.	250 ton/cyl.
	136 tonne	204 tonne/cyl.	227 tonne/cyl.	227 tonne/cyl.
Maximum Load	150 ton	450 ton	500 ton	900 ton
Capacity	136 tonne	408 tonne	454 tonne	816 tonne
Turntable Height	4.5"	6"	6"	6"
	115 mm	152 mm	152 mm	152 mm
Cylinder Capacity	10 ton	25 ton	25 ton	25 ton
	9.1 tonne	22.7 tonne	22.7 tonne	22.7 tonne
No. of Push Cylinders	2	1 or 2	1 or 2	1, 2, or 4
Cylinder Stroke	10"	14.25"	14.25"	14.25"
	254 mm	362 mm	362 mm	362 mm
Cylinder Hydraulic	Enerpac CR400	Enerpac CR400	Enerpac CR400	Enerpac CR400
Couplers	(female)	(female)	(female)	(female)
Rotation Speed	90° / 3 min	90° / 7 min	90° / 7 min	90° / 9 min
Loading Surface Material	Rubber	Rubber	Rubber	Rubber
Max. Operating	10,000 psi	10,000 psi	10,000 psi	10,000 psi
Pressure	700 bar	700 bar	700 bar	700 bar
Base Dimensions	6' x 6'	7.5' x 7.5'	8' x 8'	10' x 10'
	1.83 m x 1.83 m	2.29 m x 2.29 m	2.44 m x 2.44 m	3.05 m x 3.05 m
Rotating Plate	6'	7.5'	8'	10'
Diameter	1.83 m	2.29 m	2.44 m	3.05 m
System Weight	1645 1b	5625 1b	6400 lb	9500 lb
	745 kg	2550 kg	2900 kg	4300 kg

HYDRAULIC TURNTABLES

PROJECT

HWP Rigging developed an innovative approach to constructing a pedestrian bridge connecting two high-rise office buildings in busy downtown St. Louis, MO, USA. Moving this structure in its entirety required the combined use of many different types of rigging and transportation equipment including SPMTs, hydraulic gantries, and a Hydra-Slide TT-8 hydraulic turntable. The TT-8 was used to rotate the structure into its final orientation efficiently and accurately.

The work was performed in a single weekend, which helped to minimize impact to traffic and the local community. All of the equipment was seamlessly integrated in order to safely and efficiently transport the structure and lift it into place in one continuous sequence.

"

[The TT-8 Turntable] performed very well and was able to rotate the 90' long bridge span in a controllable manner so that our team could locate the steel precisely onto the abutments."

-Steve Hentrich, HWP Rigging

AS150 ALIGNMENT SHOES



The AS150 Alignment Shoe system makes final precise positioning of a load simple and accurate. Each component is hand-portable, allowing transportation, set-up, and mobilization with minimal personnel and equipment.

AS150 Specifications	
Full System Capacity	150 ton 138 tonne
Capacity Per Shoe	37.5 ton 34 tonne
Cylinder Capacity	10 ton 9 tonne
Cylinder Stroke	4" 100 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
Working Height	1.75" 44 mm
System Coefficient of Friction	10-15%
Friction Surface Material	UHMW polyethylene
Maximum Slope	+/- 2%
Maximum Operating Pressure	10,000 psi 700 bar



With a 150-ton (138-tonne) capacity and maximum component weight of 39 lb (18 kg), this system is designed for effortless set-up and maximum portability.



Dimensions	Length	Width (working)	Width (full)	Height	Weight
Track Section	25"	10"	15.625"	1.125"	39 lb
	635 mm	254 mm	397 mm	29 mm	18 kg
Slider Plate	12"	10"	10"	0.375"	13 lb
	305 mm	203 mm	203 mm	10 mm	6 kg
Push Cylinder	7.25"	4.75"	4.75"	4.75"	25 lb
& Support	184 mm	121 mm	121 mm	121 mm	11 kg

AS500 ALIGNMENT SHOES



AS500 Specifications	
Full System Capacity (4 Alignment Shoes)	500 ton 454 tonne
Alignment Shoe Capacity (each)	125 ton 113 tonne
Cylinder Capacity	50 ton 45.4 tonne
Cylinder Stroke	2" or 4" 50 mm or 100 mm
Cylinder Hydraulic Couplers	Enerpac CR400 (female)
Working Height	1.5" 38 mm
System Coefficient of Friction	15-20%
Slide Surface Material	Graphite
Maximum Slope	+/- 2%
Maximum Operating Pressure	10,000 psi 700 bar



The AS500 Alignment Shoe system makes final precise positioning of a load simple and accurate. Each component is hand-portable, allowing transportation, set-up, and mobilization with minimal personnel and equipment.

- 500 ton (454 tonne) system capacity
- 1.5" (38 mm) working height
- Durable rubber base prevents unwanted movement



Full system is stored in a compact steel box for convenience & easy transportation

AS500 Dimensions	Length	Width (working)	Width (full)	Height	Weight
Alignment	30"	12"	20"	6"	110 lb
Shoe Base	762 mm	510 mm	510 mm	150 mm	50 kg
Slider Plate	14"	10.375"	10.375"	0.75"	25 lb
	356 mm	260 mm	260 mm	19 mm	11 kg
Push Cylinder	5"	5"	5"	7"	37 lb
(Retracted)	130 mm	130 mm	130 mm	183 mm	17 kg
Storage Box	34"	34"	34"	22"	1075 lb
	860 mm	860 mm	860 mm	560 mm	488 kg

HYDRA-JACK CLIMBING JACKS







Hydra-Jack[™] Climbing Jacks incorporate a hydraulic cylinder inverted inside a specially designed load casing. As the jacks are extended and retracted, block piles are progressively built under the jack for a fast and safe means of raising or lowering large loads or structures.

- Available in 55 200 ton (50 180 tonne) capacity
- Equipped with velocity fuses to protect against hose rupture or rapid pressure loss
- Ideal for use with standard 4" x 4" (100mm x 100mm) jacking timbers
- Stamped, engineered drawing included

Climbing Jack	CJ55	CJ100	CJ200
Capacity	55 ton	100 ton	200 ton
	50 tonne	91 tonne	181 tonne
Cylinder Type	PowerTeam RD556	Enerpac RR1006	PowerTeam RD2006
Stroke	6"	6"	6"
	150 mm	150 mm	150 mm
Retracted Height	15.5"	18"	21.5"
	395 mm	460 mm	550 mm
Base Dimensions	17" x 17"	24" x 24"	28" x 28"
	430 mm x 430 mm	610 mm x 610 mm	710 mm x 710 mm
Max. Operating Pressure	10,000 psi	10,000 psi	10,000 psi
	<i>700 bar</i>	<i>700 bar</i>	700 bar
Weight	300 lb	750 lb	1450 lb
	136 kg	340 kg	658 kg

Hydraulic Power Units

CONVENTIONAL HYDRAULIC POWER UNITS



These single-circuit, cart-mounted power units are suitable for the operation of all Hydra-Slide equipment as well as most double-acting jacking applications. They are suitable in applications that do not require synchronized flow rates.

Radio control upgrade package available



Model		CPU-1-2E†	CPU-3-2E	CPU-4E	CPU-2G	CPU-4G
Drive Type		Electric	Electric	Electric	Gasoline	Gasoline
No. of Pressure O	utlets*	2	2	4	2	4
No. of Return Out	lets*	2	2	4	2	4
Frankra Daman	hp	1	3	7	4	10
Engine Power	k₩	0.75	2	5	3	8
Flow Rate	gal/min	2.8 / 0.26	3.7 / 0.5	3.9 / 0.9	3.0 / 0.4	3.9 / 0.9
(two-stage)	L/min	10.6 / 1.0	14 / 1.9	15 / 3.3	11 / 1.6	15 / 3.3
	gal.	10	10	10	10	10
Reservoir Volume	L	38	38	38	38	38
Max. Operating	psi	10,000	10,000	10,000	10,000	10,000
Pressure	bar	700	700	700	700	700
	in.	31	31	31	31	50
Length	mm	790	790	790	790	1270
MI * 111	in.	29	29	29	29	33
Width	mm	740	740	740	740	840
	in.	42	42	42	42	41
Height	mm	1070	1070	1070	1070	1040
	lb	330	330	330	320	440
weight	kg	150	150	150	145	200
Voltage Options		115V single-phase	3-phase‡	3-phase‡	n/a	n/a

* Units come standard with Enerpac CR400 (female) quick connect couplers on all outlets; custom options available on request.

† Intended for intermittent, light-duty use- ideal as a backup unit.

* Available in various standard voltages, 50 Hz and 60 Hz.

HYDRA-PAC SYNCHRONOUS POWER UNITS





Hydra-Pac Synchronous Power Units provide synchronized control of multiple hydraulic cylinders. These units are designed with multiple independent oil circuits to provide equal flow to each line regardless of weight distribution.

- Available with diesel, propane, or electric drive
- Custom-built to operate 4, 6, or 8 cylinders
- Large 30-gallon (113-litre) reservoir with 18 gallons (68-litre) usable oil
- Fully mechanical multi-point lifting and lowering without electronics or wires

Radio control upgrade package available



HYDRA-PAC SYNCHRONOUS POWER UNITS

Model	SPU-4D	SPU-6D	SPU-8D	SPU-4P	SPU-6P	SPU-8P	SPU-4E	SPU-6E	SPU-8E
Drive Type	Diesel	Diesel	Diesel	Propane	Propane	Propane	Electric	Electric	Electric
No. of Advance Ports*	4	6	8	4	6	8	4	6	8
No. of Retract Ports*	4	6	8	4	6	8	4	6	8
hp	25	56	56	31	62	62	15	30	40
Engine Power kW	18.5	42	42	23	46	46	11	22	30
Flow Rate gal/min	0.5	0.5	0.5	0.5	0.5	0.5	0.4‡	0.7‡	0.75‡
(single port) L/min	1.9	1.9	1.9	1.9	1.9	1.9	1.4‡	2.6‡	2.8‡
Flow Rate gal/min	1.0	1.0	1.0	1.0	1.0	1.0	0.8	1.4	1.5
(paired)⁺ L/min	3.8	3.8	3.8	3.8	3.8	3.8	2.8	5.2	5.6
dal.	18	18	18	18	18	18	18	18	18
	68	68	68	68	68	68	68	68	68
Max. Operating psi	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Pressure bar	700	700	700	700	700	700	700	700	700
in.	84	104	104	84	104	104	84	104	104
Length m	2.13	2.64	2.64	2.13	2.64	2.64	2.13	2.64	3.64
width in.	42	42	42	42	42	42	42	42	42
m m	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Hoight in.	56	56	56	63	63	63	56	56	56
mergini m	1.42	1.42	1.42	1.60	1.60	1.60	1.42	1.42	1.42
Woight 1b	2050	2650	2675	1920	2650	2675	1915	2550	2650
kg	930	1200	1210	870	1200	1210	870	1150	1200
							230/460V	- 60Hz -	3-phase
Voltages Available	Not Applicable				575V -	60Hz - 3-	phase		
							208/415V	- 50Hz -	3-phase

* Units come standard with Enerpac CR400 (female) quick connect couplers on all ports;

custom options available on request

 $^{\rm t}$ On Hydra-Pac power units, ports can be combined in pairs to double the available flow

rate, which also halves the number of usable ports

* Variable Frequency Drive allows control of flow rate across a wide range



Shown: SPU-4D Synchronous Power Unit

System Accessories

MODULAR SUPPORT STANDS



Engineered steel stands for jacking and shoring applications.

- Can be stacked and bolted together
- Equipped for lifting and handling by forklift
- Available in a range of standard heights
- Stamped, engineered drawing included

Stand	Bas	e	Height	Weight	Capacity
W6100 19	36" x	36"	18"	560 lb	100 ton
W2T00-T8	910 mm x	910 mm	460 mm	254 kg	91 tonne
W64.00.04	36" х	36"	24"	645 lb	100 ton
W3100-24	910 mm x	910 mm	<u>610</u> mm	293_kg	91 tonne
MQ100 70	36" х	36"	30"	730 lb	100 ton
M9700-90	910 mm x	910 mm	760 mm	331 kg	91 tonne
W9100 76	36" x	36"	36"	815 lb	100 ton
W9700-90	910 mm x	910 mm	<u>910</u> mm	370_kg	91 tonne
MS100 10	36" x	36"	42"	900 lb	100 ton
W3100-42	910 mm x	910 mm	1070 mm	408 kg	91 tonne
MS100-19	36" x	36"	48"	985 lb	100 ton
MOTO0-40	910 mm x	910 mm	1220 mm	447 kg	91 tonne
SS100-12	24" x	24"	12"	385 lb	100 ton
	610 mm x	610 mm	305 mm	175 kg	91 tonne
55200-12	40" x	40"	12"	1020 lb	200 ton
33200-12	1020 mm x	1020 mm	305 mm	463 kg	181 tonne
88200 2/	40" x	40"	24"	1195 lb	200 ton
33200-24	1020 mm x	1020 mm	610 mm	542 kg	181 tonne



ALUMINUM SUPPORT BEAMS



Shown with LP350 Skidding System tracks



Engineered, light-weight aluminum beams to provide enhanced gap-spanning capability for Hydra-Slide XLP30, XLP150, and LP350 skidding systems, or as a stand-alone addition to your rigging gear.

- Hand-portable & robust
- Simple finger joints with pin connections
- Up to 3' (0.9m) span with full capacity
- Enhances structural integrity of low profile skidding systems
- Stamped, engineered load chart provided

Specifications	
Full Length	72" 1829 mm
Effective Length	60" 1524 mm
Height	6" 152 mm
Width	16.375" 416 mm
Weight	106 lb 48 kg
Material	Aluminum 6061-T6
Load Capacity	15 ton/ft. 45 tonne/m
Max. Allowable Span	36" 910 mm



EKKI JACKING TIMBERS



Ideally suited for jacking and blocking applications, Ekki hardwood jacking timbers are exceptionally strong and resistant to crushing and bending.

- 25+ year lifespan
- naturally resistant to rot, decay, pests, and splitting
- Timbers do not become structurally compromised over time
- Flame-resistant

Nominal Size	Length	Width	Height	Weight
07 47 047	23.6"	3.7"	1.8"	7 lb
2" x 4" x 24"	600 mm	95 mm	45 mm	3 kg
4" x 4" x 40"	39.4"	3.9"	3.9"	24 lb
	1.00 m	100 mm	100 mm	11 kg
47	39.4"	5.6"	3.7"	33 lb
4" x 6" x 40"	1.00 m	142 mm	93 mm	15 kg



STORAGE CRIBS

We also offer steel cribs for timber storage; each crib holds 100 standard 4" x 4" (100mm x 100mm) ekki timbers.

- Perforated bottom and sides for drainage and ventilation
- Forkliftable & equipped with lifting lugs
- Stackable
- Engineered design

	Length	Width	Height	Weight
Crib	46"	45"	50"	300 lb
Dimensions	1.17 m	1.14 m	1.27 m	136 kg



Advantages

Ekki wood is one of the strongest, toughest, and most durable timbers available, with a lifespan of 25+ years. it is naturally resistant to rot, decay, biological attack, industrial chemicals, and abrasion. Ekki is also flame-resistant and has an extremely high crushing strength.

	Ekki	White Oak	Hemlock/ Fir	Spruce	Rhino Crib (synthetic)
Static bending yield stress (in-lb)	13,589	3,730	4,320	3,090	2,750
Crushing strength parallel to grain (in-lb)	10,450	3,580	3,610	2,760	n/a
Crushing strength normal to grain (in-lb)	2,450	716	460	300	1482
Specific gravity (g/cm³)	1.1 - 1.3	0.7 - 0.74	0.64 - 0.8	0.43 - 0.8	0.93

Sources: Forinek Canada Corp., Forestry Technical Report 21, and the Timber Handbook published by the TNO, Delft, Netherlands.

Maintenance & Storage

Ekki wood should be stored in a dry location with constant humidity and temperature. If this is not possible, it should at least be protected from direct sunlight, wind, and excess moisture.

Common names:

Lophira alata

Ekki, Azobe, Bongossi, Bakundu (Cameroon), Kaku (Ghana), Esore (Ivory Coast), Aba (Nigeria), Endwi (Sierra Leone)

Distribution

West Africa, extending into the Congo basin; occurs in evergreen and moist deciduous forests, in freshwater swamp forests, and close to river banks.

Description

Heartwood is dark red, chocolate brown, or purple-brown with conspicuous white deposits in the vessels. Texture is coarse, grain usually interlocked; lustre is low, no characteristic odour or taste.

Finish

Ekki is typically delivered "green" with up to about 40% moisture content, clear and defect free with no sapwood and no centre of heart. Timbers are planed 4 sides to tolerances of +/-1 mm. Ends are waxed to reduce the migration of moisture into and out of the timbers. Cross cutting in the field can be done easily and cleanly but rip sawing in the field is not recommended.

Drying

Very slow. Ekki is particularly susceptible to distortion and cracking when drying (especially thin-cut timber). Longitudinal splits can also occur rapidly. Given its applications, Ekki will often dry out while in situ, which can lead to the above mentioned problems if insufficient attention is paid to its care and storage. Minor cracking and end splitting do not normally affect its strength and usage. Shrinkage: Radial: 8%, Tangential: 11.1%, Volumetric: 18.3%

Fire Rating

EN 13823 - Single Burning Item (SBI): 45mm x 150mm sample tested in accordance with NEN-EN 13823:2002 resulted in a Bs-1 classification. Source: Test Results Indicative SBI Examination of Massive Azobe Wood - 45 mm. TNO Report 2006-CVB-R0352, 2006.

DRAGONWOOD JACKING TIMBERS



Engineered jacking timbers made of bamboo composite. These timbers have strength characteristics comparable to traditional hardwood timbers, while also being more uniform and more sustainable to produce.

> DRAGONWOOD® Long Lasting Wood made from Bamboo

- Resistant to rot, decay, and pests
- Not susceptible to warping, shrinking, or splitting
- Greater uniformity and consistency than natural timbers
- FSC-certified as a sustainable timber product





Available Sizes

Nominal Size	Length	Width	Height	Weight
4"x4"x40" timber	40"	4.0"	4.0"	27 lb
	1020 mm	102 mm	102 mm	12 kg
Storage crib with	53"	40"	44"	3165 lb
(100) pieces	1350 mm	1020 mm	1120 mm	1436 kg
4"x4"x48" timber	48"	4.0"	4.0"	33 lb
	1220 mm	102 mm	102 mm	15 kg
Storage crib with	53"	48"	44"	3798 lb
(100) pieces	1350 m	1220 mm	1120 mm	1723 kg

Supplemental Information

SKIDDING SYSTEM

Heavy Track Systems

Our Heavy Track skidding systems feature rigid steel track sections that can carry load over unsupported spans.

Extremely durable and user-friendly, these systems are ideal for rough site conditions, trans-loading, and spanning pits or other openings.

Low Profile Systems

Our Low Profile skidding systems are completely hand-portable and feature extremely low working height.

Compact and lightweight, these systems are ideal for areas with restricted access/clearance and flat, continuous support.





Features	Heavy Track	Low Profile
Capacity range	300 - 1000 ton 272 - 907 tonne	150 - 350 ton 136 - 318 tonne
Requires continuous support	No	Yes
Load-bearing track	Yes	No
Fully hand-portable	No	Yes
Bidirectional tracks	Yes	Yes

POWER UNITS COMPARISON

All Hydra-Slide skidding systems, turntables, alignment shoes, and jacks, as well as most other double-acting jack applications, can be operated using both Hydra-Pac synchronous power units and conventional power unitseach have their own advantages.

Hydra-Pac Synchronous

Our Hydra-Pac[™] Synchronous power units are designed with multiple independent oil circuits. The circuits are not interconnected, and provide equal flow to each line regardless of the weight of the load or the pressure in the circuit. This is accomplished using specially designed piston pumps, valves and control devices.

Under normal operating conditions, oil flow and hence cylinder extension and retraction rates should be within 5% of each other on all circuits, even if the weight is unbalanced.

Advantages

Synchronous power units allow the operator to safely lift, lower, or slide virtually any load equally on all points.

Conventional

Our conventional hydraulic power units are suitable for applications that do not require synchronized flow rates.

Conventional power units have a single oil supply circuit. The circuit may be split into multiple outlets, but since they are connected, they will act as one. When jacking a load that is heavier at one end, cylinders with less load will advance more quickly, so it is often necessary to jack "end to end" to ensure load balance. When skidding, it is necessary to ensure that both cylinders advance at nearly the same rate.

Advantages

These units are low-cost, compact, and highly portable, making them ideal as back-up units.

Features	Hydra-Pac Synchronous	Conventional
Engine/motor types available	Diesel, propane, electric	gasoline, electric
Manual control valves for	Ves	No
each circuit		
Flow rate controlled	Ves	No
independently in each circuit	165	100
Maintain constant jacking/	Ves	No
lowering speed	TES	100
Maintain uniform pushing/	Voc	Ne
pulling forces	fes	NO
Circuits can be paired to	Voc	
increase flow	162	ΝΟ

FRICTION IN HYDRAULIC SKIDDING

First, some definitions:

Friction is defined as the force resisting the relative motion of two surfaces sliding against each other.

The **Coefficient of Friction (CoF)** is the ratio between the force of friction and the force pressing the surfaces together (the weight of the load).

The **CoF** between two surfaces is a number ranging from 0 to 1; the larger the number, the greater the resistance to sliding, and the more force is required to move a load.

At first glance you might assume that a lower coefficient of friction is better, because less force will be required to move the load; however, this assumption doesn't account for safety.

In many cases the field conditions are not perfect and we need to account for factors like slight out-oflevelness, uneven ground conditions, and load momentum. No matter the conditions, we still need to maintain precise control over the direction and speed of movement, and have the ability to stop the load precisely.

This is where a higher coefficient of friction is actually beneficial. With a known CoF we can plan for how much push or pull force will be required, while still maintaining this precise control over direction and speed, and most importantly preventing the load from running away.

Our skidding systems use an engineered lubricating material at the sliding surface which provides a consistent CoF in the range of 0.10 to 0.20, with very little variance, while the relatively high forces required to move the load are provided by hydraulic push or pull cylinders. The cylinders exert their forces internally and keep the speed of movement slow and controlled, while the track acts as a guide ensuring the load always goes where it is intended to.



Referring to the diagram above:

If the load is 300 tons and the known CoF is **0.15**, the push force required is **300 x 0.15 = 45** tons.

Our HT300 system provides this push force using two 30-ton hydraulic cylinders.

If the load is 500 tons and the known CoF is **0.20**, the push force required is **500 x 0.20 = 100 tons**.

Our HT500 system provides this push force using two 55-ton hydraulic cylinders.

In moving heavy loads with hydraulic skidding systems, friction ensures that the movement of loads is always under precise control, and keeps the job safe for everyone around.



Ensuring a smooth ride from fab to field.

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