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RS45 SERIES TECHNICAL GUIDE



HYSTER

45-31 CH

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BAJO COSTO TOTAL DE LAS OPERACIONES DE PUERTOS

Con una capacidad de elevación de 45 toneladas en la primera fila y de 27/31 en la segunda, el ReachStacker RS45 de Hyster® está optimizado para las operaciones de manipulación de contenedores. El diseño inteligente incluye un motor del tamaño adecuado, un chasis equilibrado y una pluma dedicada, que ponen el peso y la fuerza exactamente donde deben estar.

- La combinación de un peso más ligero y un motor de menor tamaño ofrece una economía de combustible hasta un 15 % mejor que los motores de mayor desplazamiento/potencia
- Un montacargas más ligero produce una mayor vida útil de las llantas
- Un intervalo de servicio extendido y un fácil acceso para servicio, combinado con una alta estandarización de piezas, reducen el costo de mantenimiento en general
- Las tecnologías de sistema hidráulico y enfriamiento a demanda ahorran combustible y aumentan la vida útil de los componentes
- La solución de telemática disponible de Hyster Tracker™ le brinda los datos que necesita para operar su flotilla de manera más eficaz y reducir sus costos.

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LAS ALTAS VELOCIDADES DE OPERACIÓN IMPULSAN LA PRODUCTIVIDAD

Cuando un buque portacontenedores está atracado, el tiempo es dinero, y usted necesita poder confiar en su equipo para realizar el trabajo.

Se sentirá satisfecho con sus tiempos de ciclo al operar el manipulador de contenedores RS45. El sistema de elevación de dos velocidades, combinado con una aceleración rápida, mejora significativamente la velocidad de elevación sin carga. Con su motor del tamaño ideal y el avance pausado de la transmisión que le ofrece gran control durante el apilado de contenedores, con seguridad hará el trabajo rápidamente y de manera correcta.

El ReachStacker cuenta con un spreader 817 Innovation, el cual es rápido y eficiente.

La comodidad del operador también es un factor que mejora la productividad. La espaciosa cabina está diseñada ergonómicamente y tiene controles intuitivos ubicados para un manejo eficiente y cómodo. La cabina deslizante asistida estándar permite al operador seleccionar un punto de observación frontal óptimo con el toque de un botón.



- Spreader con nivelación mecánica (ilustrado) o asistido opcional
- Opción de amortiguación con inclinación asistida opcional
- Desplazamiento lateral de +/- 800 mm, rotación de +195/-105° y twistlocks automáticos



- Bajos niveles de ruido y vibraciones
- Variedad de opciones de asientos
- Controles ajustables
- Cómoda pantalla digital para el operador ubicada en el tablero

LA DURABILIDAD VIENE INCLUIDA COMO ESTÁNDAR

El manipulador de contenedores RS45 está diseñado y construido por el mismo equipo experimentado de nuestra serie de montacargas RS46. Es por esto que usted obtendrá la reconocida calidad de fabricación de Hyster® y los componentes probados de proveedores líderes del mercado como el motor Cummins QSL9 Nivel 3/Etapa IIIA, el eje de transmisión Kessler, la transmisión TE-27 Spicer Off-Highway, el spreader 817 Innovation y el sistema hidráulico Danfoss.

Las características del sistema hidráulico a demanda ayudan a reducir el costo total de adquisición, al incrementar la vida de los componentes y reducir las necesidades de servicio. Por ejemplo, el ventilador de enfriamiento solo funciona cuando se requiere, reduciendo las cargas accesorias en el tren de potencia, consumiendo menos combustible y reduciendo los niveles de ruido. Además, el sistema hidráulico de detección de carga a demanda de Hyster® reduce el consumo de combustible hasta un 10 % y extiende la vida útil de los componentes al utilizar aceite hidráulico solo cuando se necesita.



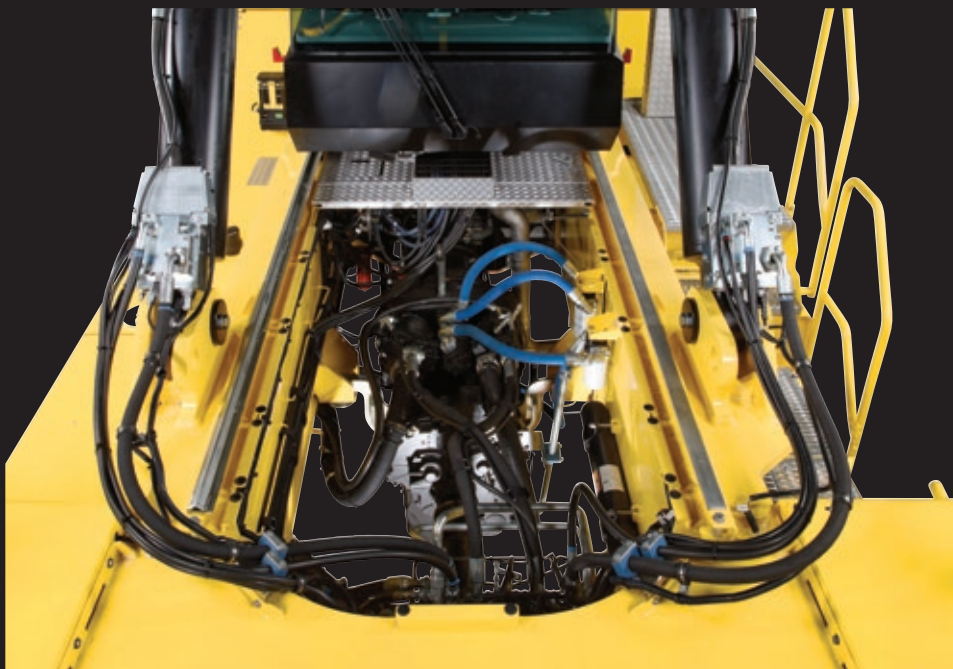
FACILIDAD DE SERVICIO PARA UN MAYOR TIEMPO DE ACTIVIDAD

Diseñado pensando en el técnico de servicio, el ReachStacker RS45 de Hyster® presenta un diseño inteligente de montacargas para un acceso de servicio rápido y fácil.

- La cabina del operador se desliza hacia adelante o hacia atrás de forma que el técnico puede acceder rápidamente a los componentes debajo sin tener que usar herramientas.
- Las cubiertas de acceso con bisagras hacen que las verificaciones diarias sean cuestión de segundos.
- Todos los puertos de conexión del sistema de enfriamiento pueden alcanzarse claramente desde la parte inferior del montacargas.
- Las placas de la cubierta superior pueden quitarse con facilidad con pestillos de desconexión rápida.
- Los controles CANbus del equipo y el spreader permiten un diagnóstico rápido y fácil de las fallas.

La facilidad de acceso no es lo único que facilita el trabajo del mecánico.

- Los componentes principales del motor y del tren de transmisión están diseñados para operar en intervalos de servicio de 500 horas.
- Intervalos extendidos para el cambio de aceite hidráulico de hasta 3000 horas (hasta 10 000 horas con muestreo del fluido hidráulico)





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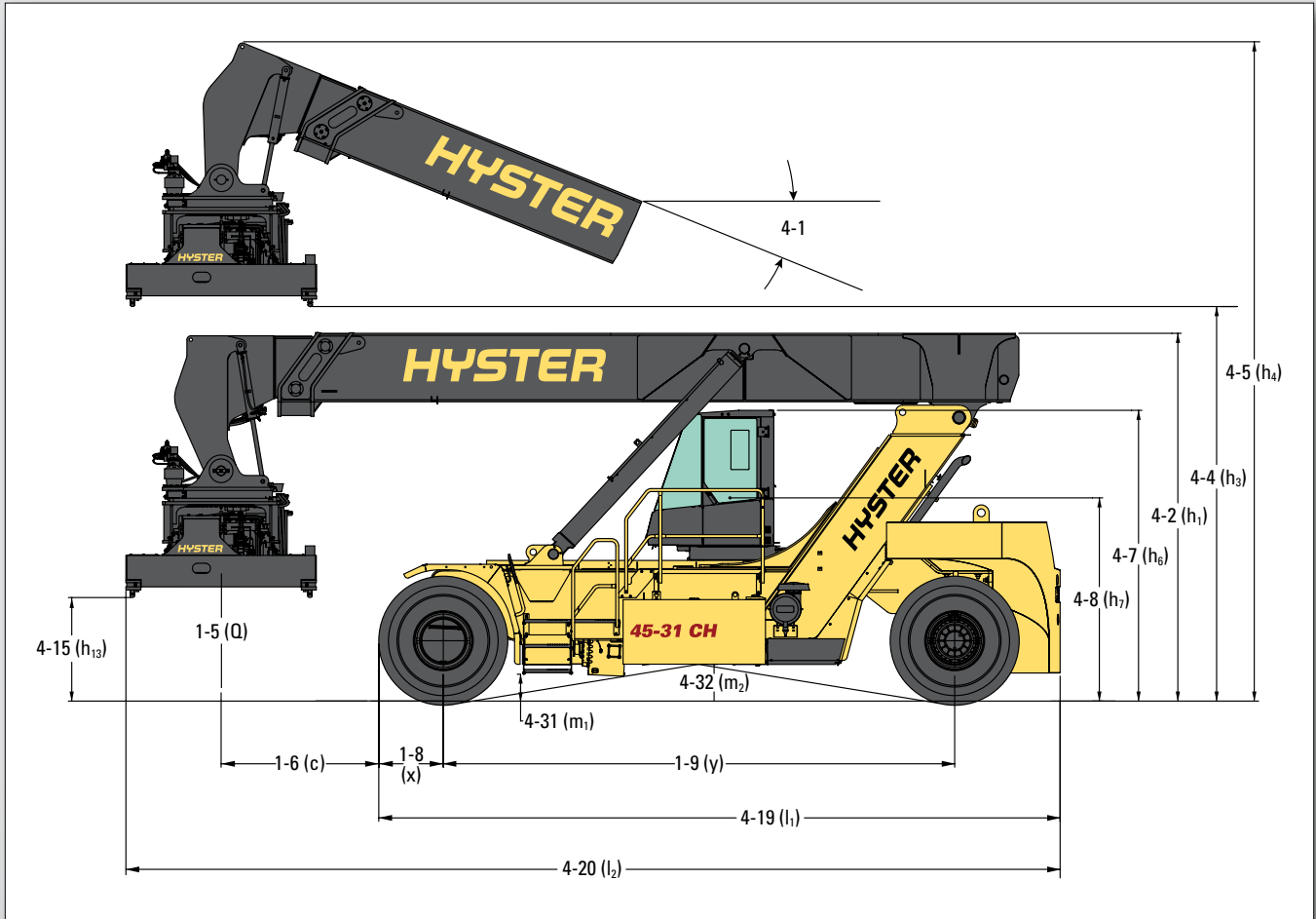


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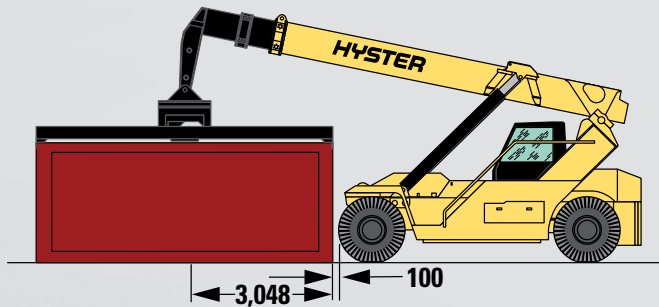
Los productos Hyster están sujetos a cambios sin previo aviso. Es posible que los montacargas se exhiban con equipos opcionales.

> TRUCK DIMENSIONS

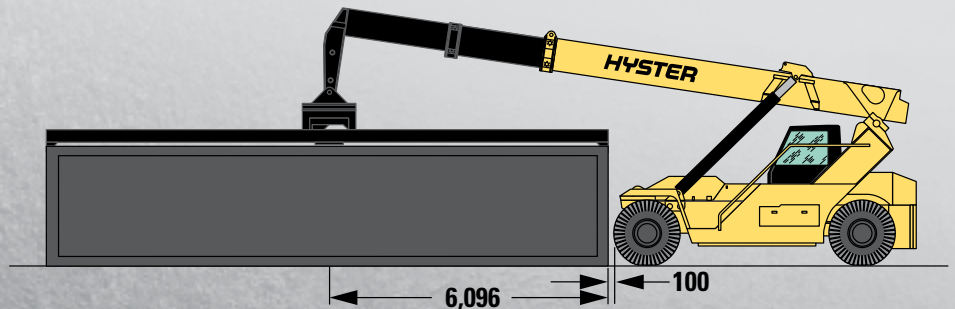


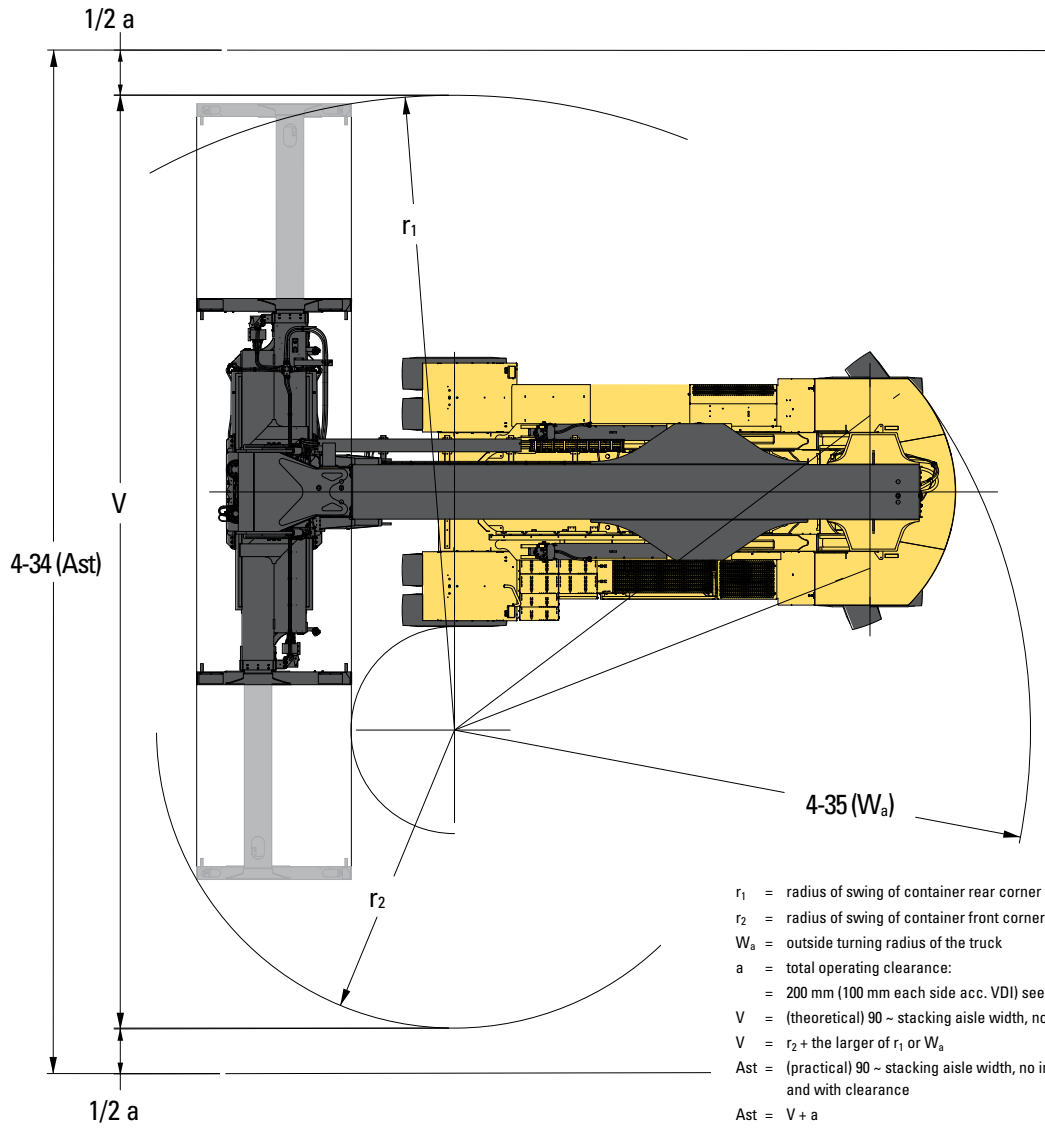
20'-0" END ON LIFTING CAPACITIES

MAXIMUM CAPACITY CONTAINER PICKING END TO END		
MODEL	20'	40'
	kg	kg
RS45-27	31,000	12,300
RS45-31	34,000	15,000

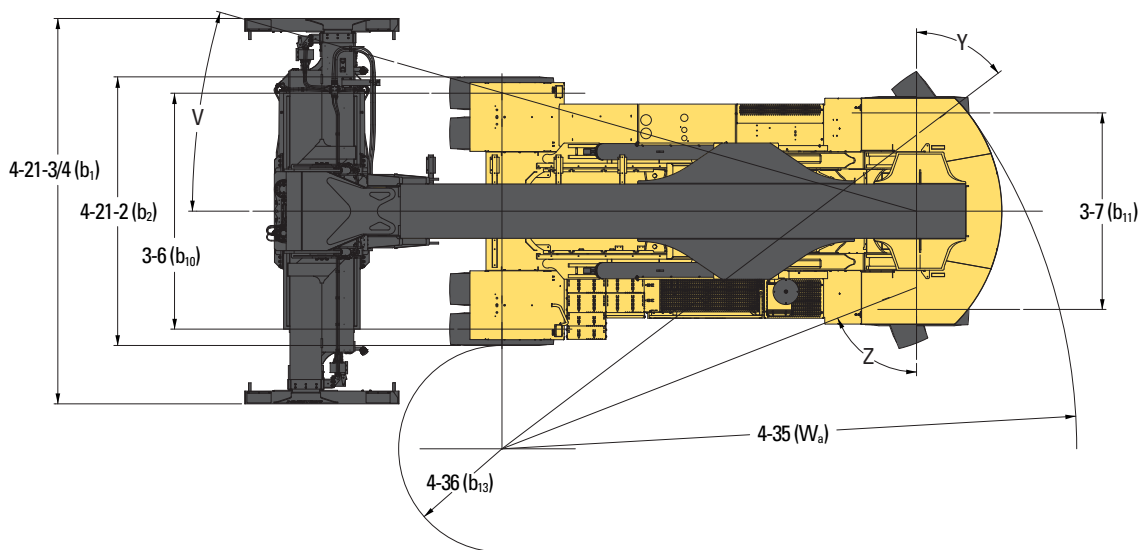


40'-0" END ON LIFTING CAPACITIES





- r_1 = radius of swing of container rear corner
- r_2 = radius of swing of container front corner
- W_a = outside turning radius of the truck
- a = total operating clearance:
= 200 mm (100 mm each side acc. VDI) see VDI line 4.34.3
- V = (theoretical) 90° stacking aisle width, no intrusive stacking
- V = r_2 + the larger of r_1 or W_a
- Ast = (practical) 90° stacking aisle width, no intrusive stacking and with clearance
- Ast = V + a



➤ RS 45-27, RS 45-31 CONTAINER HANDLERS

					HYSTER	HYSTER
GENERAL	1-1	Manufacturer			HYSTER	HYSTER
	1-2	Model designation			RS45-27CH	RS45-31CH
	1-3	Powertrain / drivetrain			Diesel	Diesel
	1-4	Operator type			Seated	Seated
	1-5-1	Load capacity at load center distance c_1	Q_1	kg	45,000	45,000
	1-5-2	Load capacity at load center distance c_2	Q_2	kg	27,000	31,000
	1-5-3	Load capacity at load center distance c_3	Q_3	kg	12,300	15,000
	1-6-1	Load center distance c_1 (1)	c_1	mm	1,565	1,565
	1-6-2	Load center distance c_2 (1)	c_2	mm	3,815	3,815
	1-6-3	Load center distance c_3 (1)	c_3	mm	6,315	6,315
1-8	Load distance	x	mm	835	835	
1-9	Wheelbase	y	mm	6,500	6,500	
1-10	Stacking height at first row (number x container height)		#	5 x 9' 6"	5 x 9' 6"	
WEIGHT	2-1	Service weight		kg	63,300	66,300
	2-2-1	Axle loading with load, front / rear at c_1		kg	95,957 12,343	95,765 15,535
	2-3-1	Axle loading without load, front / rear at c_1		kg	34,307 28,993	34,115 32,185
WHEELS	3-1	Tire type			Pneumatic	Pneumatic
	3-2	Tire size, front			18.00-25 40PR	18.00-25 40PR
	3-3	Tire size, rear			18.00-25 40PR	18.00-25 40PR
	3-5	Number of wheels, front / rear (x = driven wheels)			x4 / 2	x4 / 2
	3-6	Tread, front	b_{10}	mm	3,703	3,703
	3-7	Tread, rear	b_{11}	mm	3,060	3,060
	DIMENSIONS	4-1	Boom angle minimum / maximum		degrees	0 / 59
4-2		Height of boom lowered	h_1	mm	4,700	4,700
4-4-1		Lift height at load center c_1 (2)	$h_{3,1}$	mm	15,150	15,150
4-4-2		Lift height at load center c_2 (2)	$h_{3,2}$	mm	13,540	13,540
4-4-3		Lift height at load center c_3 (2)	$h_{3,3}$	mm	10,390	10,390
4-5		Height, boom extended	h_4	mm	18,110	18,110
4-7		Height of overhead guard (cabin)	h_6	mm	3,720	3,720
4-8		Seat height to SIP (3)	h_7	mm	2,555	2,555
4-15		Height under twistlock - lowered (2)	h_{13}	mm	1,345	1,345
4-19		Overall length	l_1	mm	8,660	8,660
4-20		Overall length including boom retracted	l_2	mm	11,875	11,875
4-21-2		Overall width across all of truck	b_2	mm	4,200	4,200
4-21-3		Overall width across spreader 20'	$b_{1,20}$	mm	6,100	6,100
4-21-4		Overall width across spreader 40'	$b_{1,40}$	mm	12,200	12,200
4-28		Reach distance	l_4	mm	4,310	4,310
4-31		Ground clearance, lowest point	m_1	mm	285	285
4-32	Ground clearance, center or wheelbase	m_2	mm	437	437	
4-34-3-4	Aisle width: 20' container, reduced / full stroke (4)	Ast 20	mm	12,520 11,950	12,520 11,950	
4-34-4-4	Aisle width: 40' container, reduced / full stroke (4)	Ast 40	mm	14,040 13,830	14,040 13,830	
4-35	Outside turning radius, reduced / full stroke	W_a	mm	8,990 8,450	8,990 8,450	
4-36	Internal turning radius, reduced / full stroke	b_{13}	mm	1,620 1,040	1,620 1,040	
PERFORMANCE	5-1	Travel speed with / without load		km/h	20 23	20 23
	5-2	Lifting speed with / without load		m/s	0.24 0.41	0.24 0.41
	5-3	Lowering speed with / without load		m/s	0.45 0.45	0.45 0.45
	5-4-1	Telescoping speed 20' - 40'		sec	9	9
	5-5	Drawbar pull - 1 mph (1.6 km/h) with / without load		kN	312 320	309 317
	5-7	Gradeability - 1 mph (1.6 km/h) with / without load (5)		%	27 31	27 29

GENERAL	1-1	Manufacturer			HYSTER
	1-2	Model designation			RS45-27/31CH
	1-3	Powertrain / drivetrain			Diesel

ENGINE	7-1	Engine manufacturer / model			Cummins / QSL9 227
	7-1a	EPA / CE Tier compliance			Tier 3 / Stage IIIA
	7-2	Engine power output according to ISO 1585		kW	227
	7-2-1	Engine power output - peak		kW	247
	7-3	Rated speed		rpm	2,000
	7-3-1	Engine torque @rpm (1/min)		N-m	1,424 @ 1500
	7-4	Number of cylinders / displacement		# / cm3	6 / 8900
		Turbocharger			Wastegate, air cooled
	7-8	Alternator output		Amps	120
	7-10	Battery voltage, rated capacity		V / Ah	24 / 160

DRIVE	8-1	Drive control / transmission		Type / #	Hydrodynamic Transmission
	8-2	Transmission manufacturer / type		Type / #	Spicer Off-Highway / TE-27
	8-4	Transmission speeds forward / backward		#	4 / 4
	8-5	Coupling		Type	Torque Converter
	8-6	Wheel drive / drive axle manufacturer / type		Type / #	AxleTech / PRC7545
	8-11	Service brake		Type	Oil immersed (wet) disc
	8-12	Parking brake		Type	Spring applied, dry disc on drive axle

SPREADER	9-1	Spreader manufacturer / type		Type / #	Elme / 817
	9-1-1	Pile slope, mechanical without PPS		degrees	3
	9-1-3	Pile slope, total with PPS		degrees	6
	9-3	Size of containers		ft	ISO 20' - 40'
	9-4	Side shift	b _g	mm	+800 / -800
	9-6-1	Rotation angle, without override		degrees	n/a
	9-6-2	Rotation angle, with override		degrees	+185 / -95

MISC	10-3	Hydraulic tank capacity		l	625
	10-4	Fuel tank capacity		l	830
	10-5	Steering design			Hydrostatic
	10-7	Sound pressure level at driver's seat	L _{paz}	dB(A)	78
	10-7-1	Sound power level during the work cycle	L _{waz}	dB(A)	109

NOTES:


Specifications are affected by the condition of the vehicle and how it is equipped, as well as the nature and condition of the operating area. Inform your dealer of the nature and condition of the intended operating area when purchasing your Hyster® truck.

- (1) From face of front tires
- (2) With Mechanical Pile Slope (MPS). For optional Powered Pile Slope (PPS) function: deduct 310 mm
- (3) Full suspension seat in depressed position
- (4) Spreader at 8.0 m high, central above front axle; container 0mm in front of tires; includes 2 x 100 mm clearance; full/reduced stroke steer cylinder
- (5) Gradeability figures are provided for comparison of tractive performance, but are not intended to endorse the operation of vehicle on the stated inclines.

All capacities are according to EN1459.

All specifications and capacities are valid for trucks equipped with a Hyster® container handling spreader for handling ISO containers.

Specification data is based on VDI 2198.

 **Safety:** This truck conforms to the current EU requirements.

NOTICE:

Care must be exercised when handling elevated loads. Operators must be trained and must read, understand and follow the instructions contained in the Operating Manual.

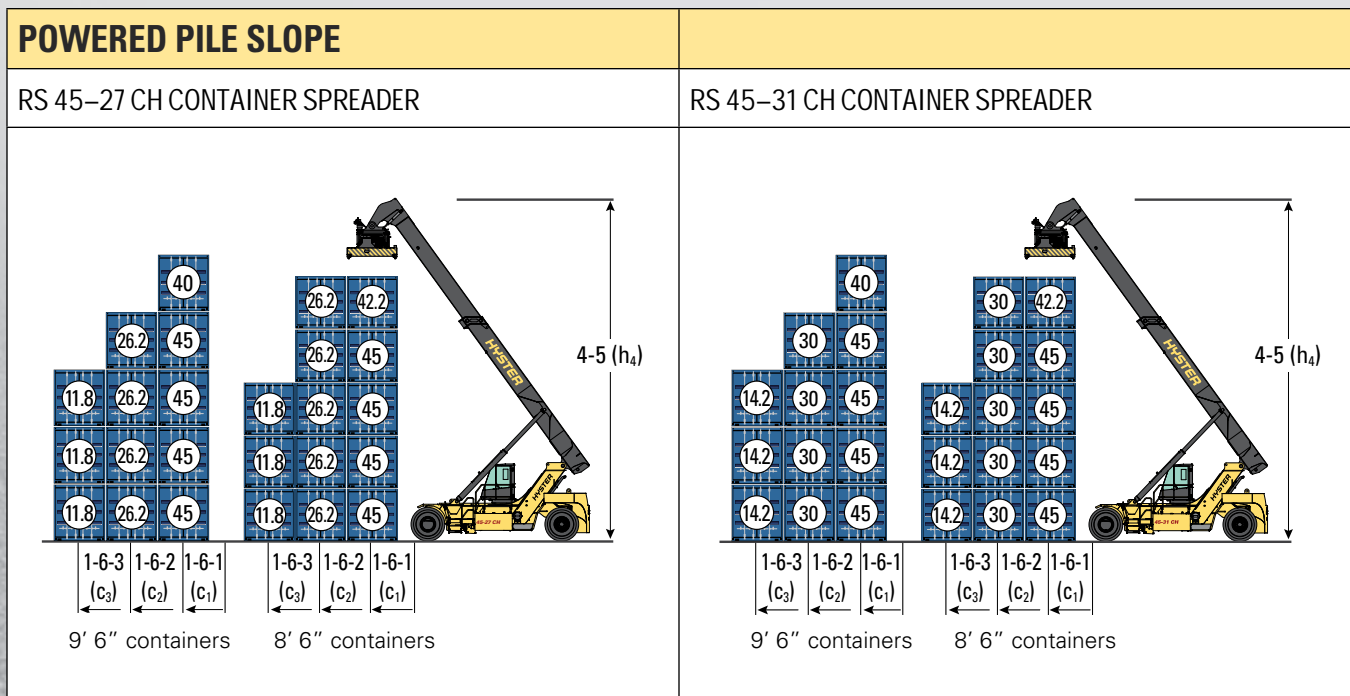
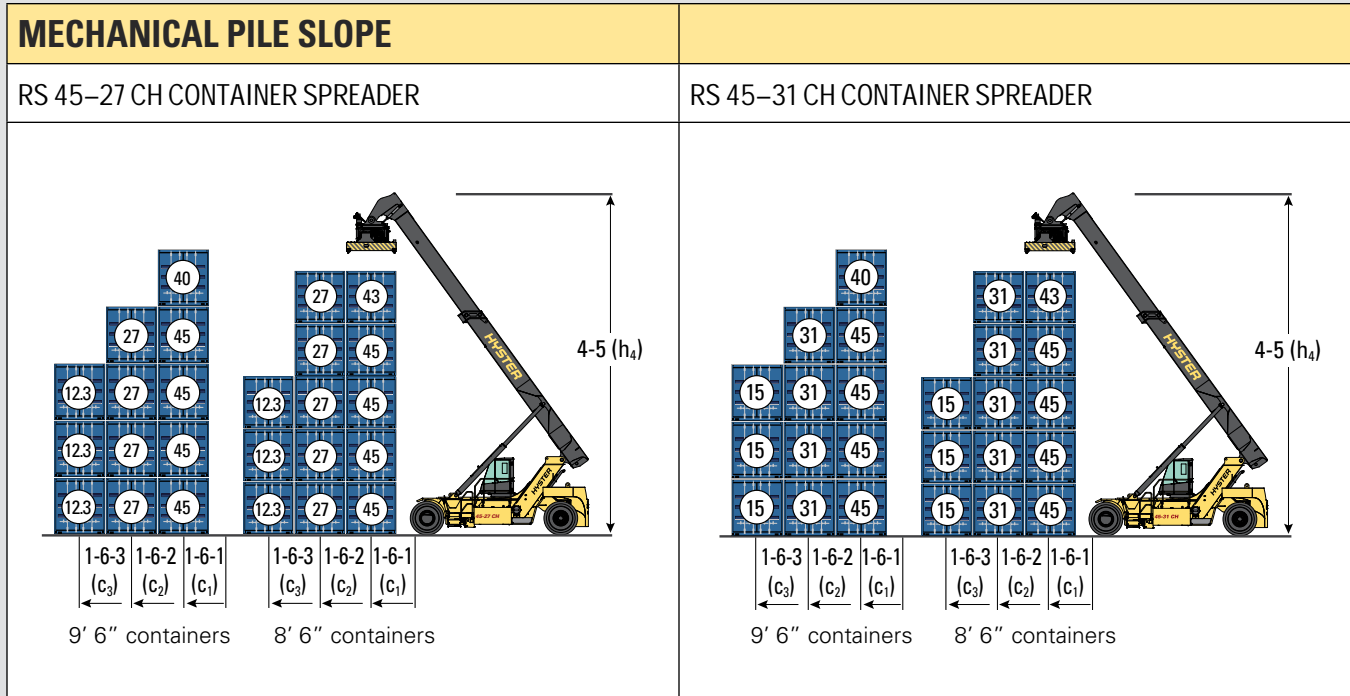
All values are nominal values and they are subject to tolerances. For further information, please contact the manufacturer.

Hyster products are subject to change without notice.

Lift trucks illustrated may feature optional equipment. Values may vary with alternative configurations.

CERTIFICATION: Hyster lift trucks meet the design and construction requirements of B56.1-1969, per OSHA Section 1910.178(a)(2), and also comply with the B56.1 revision in effect at time of manufacture.

➤ **RATED CAPACITIES AND STACKING HEIGHTS – CONTAINER HANDLERS**



CERTIFICATION: Hyster lift trucks meet the design and construction requirements of B56.1-1969, per OSHA Section 1910.178(a)(2), and also comply with the B56.1 revision in effect at time of manufacture. Certification of compliance with the applicable ANSI standards appears on the lift truck. Performance specifications are for a truck equipped as described under Standard Equipment on this Technical Guide. Performance specifications are affected by the condition of the vehicle and how it is equipped, as well as by the nature, condition of the operating area, proper service and maintenance of the vehicle. If these specifications are critical, the proposed application should be discussed with your dealer.



PERFORMANCE	STD	OPT
Cummins QSL 9 turbo diesel engine delivering 227 kW (rated) / 247 kW (max)	X	
Tier 3 / Stage IIIA compliant	X	
Wastegate turbocharger	X	
Hibernate Idle	X	
Hydraulically driven on-demand cooling fan	X	
120 amp alternator	X	
Powertrain protection system	X	
Spicer Off-Highway TE-27 4-speed auto-shifting transmission	X	
Axletech PRC 7547 drive axle with wet disc brakes	X	
Kessler D102 drive axle with wet disc brakes		X
DRIVE	STD	OPT
Traction speed limiter when carrying container (adjustable)	X	
Traction speed limiter - unconditional (adjustable)		X
Steer axle with reduced stroke steer cylinder for longer tire life*		X
Steer axle with full stroke steer cylinder for tight turning radius*		X
E3 pneumatic drive and steer tires Continental Cranemaster 18.00 – 25.40PR	X	
E4 pneumatic drive and steer tires MRF Muscle Rok 8.00 – 25.40PR		X
E4 pneumatic drive and steer tires Continental Container Master 8.00 – 25.40PR		X
E4 pneumatic drive and steer tires Goodyear ELV-4B 8.00 – 25.40PR		X
Drive and steer Slick Tires Bridgestone 8.00 – 25.40PR		X
Drive and steer Slick Radial Tires Goodyear EV5S 18.00 R25		X
LIFT	STD	OPT
On-demand load sensing hydraulic system	X	
Automatic throttle-up when lifting (in neutral or inching)	X	
2-stage boom for 5-high 1st row stacking	X	
3B6 load moment indicator (integrated in digital operator display)	X	
High speed hoist system - when empty	X	
High speed hoist system - below 10 tons		X
Hydraulic system temperature protection		X
Container weighing system SOLAS compliant		X
HANDLING	STD	OPT
CANBus spreader, ELME model 817 with rotation	X	
Mechanical Pile Slope	X	
Powered Pile Slope		X
Powered dampening		X
4 lifting eyes located on end beam corners	X	
4 lifting eyes located under center beam of spreader		X
Container guides - located outside near twistlocks		X
Container guides - 500mm inset, heavy duty		X
Rotation stops with override		X
Automatic extend/retract		X
Stops for 30' containers		X
Vertical lift		X
VISIBILITY	STD	OPT
External wide angle mirrors mounted on rear of front fenders	X	
External wide angle mirrors mounted on top of front fenders	X	
Rear view camera system		X
Halogen work lights	X	
LED work lights		X
High performance LED work lights		X
LED twistlock indicator lights		X
LED stop/tail/brake lights	X	
Turn signals, hazard & marker lights (LED)*		X
APPEARANCE	STD	OPT
Hyster yellow paint base truck	X	
Special paint base truck		X

*Standard or optional in selected markets. Other options available through Special Products Engineering Department (SPED). Contact Hyster for details.

ERGONOMICS	STD	OPT
Powered sliding cabin (1200 mm), including additional mirrors on top of fenders	X	
Isolated mounting for low noise and vibration	X	
Coat hook	X	
Cabin emergency exit - rear hinged window	X	
Front, top and rear wipers	X	
Front and rear window defrosters	X	
Left side handrails, stairway and cabin door	X	
Right side handrails, stairway and cabin door		X
Stair lights		X
7" digital operator display	X	
Seat-side joystick hydraulic control	X	
Steering wheel spinner knob	X	
Directional control lever	X	
Interior wide angle mirrors	X	
Heater with 3-speed fan	X	
Telescoping & tilting steering column	X	
Recirculation fan	X	
DC/DC converter 24 volt/12 volt with socket*	X	
Air conditioning		X
Sun shades on top and rear		X
Radio preparation set-up (wiring, two speakers and antenna)		X
Reading light		X
Operator presence system	X	
Mechanical suspension seat	X	
Deluxe air suspension seat		X
Low backrest*		X
High backrest*		X
Cloth seat cover	X	
Vinyl seat cover		X
Seat heating		X
2-point high visibility seatbelt	X	
3-point high visibility seatbelt		X
OPERATION	STD	OPT
Electric air horn 112 dB	X	
Visible alarm – amber strobe light, key switch activated*		X
Visible alarm – amber strobe light, switch and key switch activated*		X
Audible alarm – reverse direction activated 82–102 dB(A), self-adjusting	X	
Forward motion alarm		X
Seatbelt interlock for engine start		X
Seatbelt indicator light on top of cab		X
Tire pressure monitoring system		X
Lockable battery disconnect switch	X	
NATO plug start aid		X
Adjustable automatic “empty seat” engine shutdown		X
Trainer seat		X
Non-locking fuel cap	X	
Lockable fuel cap		X
Hyster Tracker wireless asset management - monitoring*		X
Hyster Tracker wireless asset management - access / verification		X
Auto greasing system for basic truck & outer boom		X
Auto greasing system for inner boom and spreader		X
24 volt electrical system	X	
Engine block heater 110 & 220 volt		X
Steer wheel lug nut protection	X	
Engine compartment light		X
SUPPLEMENTAL	STD	OPT
Literature package	X	
Operator's manual	X	
Warranty: 12 months / 2,000 hours manufacturer's warranty	X	
CE Certification		X



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MANIPULADORES DE CONTENEDORES REACHSTACKER

FOLLETO DEL PRODUCTO


RS45CH





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Part No. RS45/TG
4/2017 Litho in U.S.A.

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