



TRACK STAR

SPECIFICATIONS
OPERATING RANGES

GRADALL®

HYDRAULIC EXCAVATORS



TRACK STAR



The Track Star is a mobile, one-man machine designed specifically for the railroad industry. Use it on a never-ending list of jobs, including right-of-way maintenance, ditching, bank sloping, cleaning rock slides, emergency repairs, track construction, cleaning between track, rip-rapping, grading, spreading ballast, rail handling,

crossing repair, removing old ballast, pulling ties, excavating, culvert installation, material handling and yard maintenance.

A 4x4 machine, the Track Star features a single engine powering both upperstructure and carrier. The design incorporates a lower center of gravity and front axle lock-outs for greater stability on fewer axles. The one engine concept and two-axle design combine to offer substantial maintenance savings.

Travel to the job site at highway speeds...then work on or off the track, efficiently and effectively. All travel functions can be controlled from the upper operator's cab, including gear selection, high speed reverse, and machine and optional car braking.



Shift-on-the-go transmission is controlled from operator cab and features 3-speed forward and 3-speed reverse, including high speed reverse for on rail remote travel.



Joy stick controls for easy, convenient operation.



Optional coupler... 7700 lbs. draw bar force provides ample power for propelling loaded air-actuated dump cars.



5-way simultaneous boom movement.

Optional machine-mounted compressor provides air to operate car dump, train brakes, and coupler.



Track Star incorporates the Gradall 5-way boom...lifting, digging, tilting, swinging and telescoping with simultaneous movements of the boom improving cycle time. A variety of attachments permit you to perform a wide range of jobs with one machine. A unique Slide-A-Boom is included in the Track Star package. This unique feature adds 3' to the boom length

without the weight penalty or time-consuming installation of a boom extension.

Many outstanding features, specifically designed for railroad use, have been built into the Track Star. A choice of "fold-under" or "mast type" guide wheels offer excellent ground clearance when retracted. Hydraulically operated, the guide wheels are pinned in both up and down positions for a positive mechanical lock. An optional compressor provides air to operate the coupler, actuate train brakes and operate dump cars.

It's a Track Star. What more can we say.



ON RUBBER-LIFT CAPACITY OVER SIDE OR REAR-LB. (KG.) 7733-3008

The loads shown here are in compliance with SAE Standard J-1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

All loads with an asterisk(*) indicate the load is limited by tipping rather than hydraulic capacity.

The rated lift is based on the machine being equipped with 5100 lb. (2313 kg.) counterweight and 8345-6002 30" (760mm) excavating bucket weighing 620 lb. (281 kg.). For other buckets, adjust the listed capacities as follows:

8345-6003 24" (61cm) Excavating-

Add 212 lb. (63 kg.)

8345-6006 36" (91cm) Excavating-

Add 45 lb. (20 kg.)

8345-6005 30" (76cm) Pavement

Removal-Subtract 20 lb. (9 kg.)

8345-6026 60" (125cm) Ditching-

Add 20 lb. (9 kg.)

8345-6019 66" (168cm) Ditch

Cleaning-Subtract 5 lb. (3 kg.)

The load point is located on the bucket pivot point, including loads listed for maximum radius. Do not attempt to gain additional radius by wrapping the load line around the back of the bucket.

Do not attempt to lift or hold any load greater than these rated values at specified load radii and heights. The weight of slings and any auxiliary devices must be deducted from the rated load to determine the net load that may be lifted.

LOAD POINT HEIGHT		LOAD RADIUS (SLIDE-A-BOOM IN)										
		10' (3M)		13' 8" (4.2M)		15' (4.6M)		20' (6M)		MAX. RADIUS		
		SIDE	REAR	SIDE	REAR	SIDE	REAR	SIDE	REAR	SIDE	REAR	RAD.
ABOVE GROUND LEVEL	15' (4.6M)					4460 (2023)	4460 (2023)	3010 (1365)	3010 (1365)	2390 (1084)	2390 (1084)	22'10" (7.M)
	10' (3M)			7020 (3184)	7020 (3184)	6100 (2767)	6100 (2767)	3760 (1706)	3760 (1706)	2550* (1157)	2560 (1161)	24'4" (7.4M)
	5' (1.5M)					6050* (2744)	6330 (2871)	3640* (1651)	3940 (1787)	2390* (1084)	2620 (1188)	24'8" (7.5M)
GROUND LEVEL						5500 (2495)	5500 (2495)	3490* (1583)	3640 (1651)	2450* (1111)	2660 (1207)	23'11" (7.3M)
BELOW GROUND LEVEL	5' (1.5M)	6400 (2903)	6400 (2903)			4500 (2041)	4500 (2041)	3150 (1429)	3150 (1429)	2740 (1243)	2740 (1243)	21'11" (6.7M)
	10' (3M)	5310 (2409)	5310 (2409)			3700 (1678)	3700 (1678)			2990 (1356)	2990 (1356)	18'2" (5.5M)
	15' (4.6M)	4640 (2105)	4640 (2105)									

LOAD POINT HEIGHT		LOAD RADIUS (SLIDE-A-BOOM OUT)										
		10' (3M)		15' (4.6M)		20' (6M)		25' (7.6M)		MAX. RADIUS		
		SIDE	REAR	SIDE	REAR	SIDE	REAR	SIDE	REAR	SIDE	REAR	RAD.
ABOVE GROUND LEVEL	20' (6M)					1680 (762)	1680 (762)			1330 (603)	1330 (603)	23'6" (7.2M)
	15' (4.6M)			4170 (1892)	4170 (1892)	2780 (1261)	2780 (1261)	1820 (826)	1820 (826)	1660 (753)	1660 (753)	26' (7.9M)
	10' (3M)					3530 (1601)	3530 (1601)	2240 (1016)	2240 (1016)	1800 (816)	1800 (816)	27'4" (8.3M)
	5' (1.5M)					3430* (1556)	3710 (1683)	2160* (980)	2370 (1075)	1690* (766)	1870 (848)	27'8" (8.4M)
GROUND LEVEL						3290* (1492)	3440 (1560)	2070* (939)	2260 (1025)	1730* (785)	1910 (866)	27' (8.2M)
BELOW GROUND LEVEL	5' (1.5M)			4290 (1946)	4290 (1946)	2970 (1347)	2970 (1347)	2000* (907)	2020 (916)	1980 (898)	1980 (898)	25'3" (7.7M)
	10' (3M)	5150 (2336)	5150 (2336)	3540 (1606)	3540 (1606)	2490 (1129)	2490 (1129)					
	15' (4.6M)	4520 (2050)	4520 (2050)	2980 (1352)	2980 (1352)							

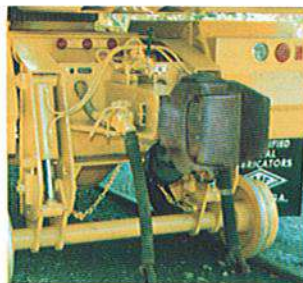
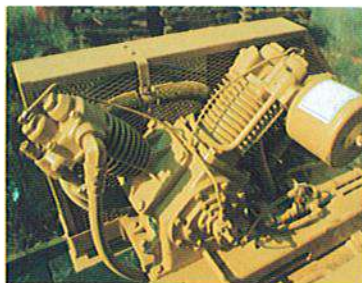
Caution: all rated loads are based on the machine being stationary and level on a firm supporting surface. For safe working loads, the user is expected to make allowance for his particular job condi-

tions, such as soft or uneven ground, out of level conditions, side loads, hazardous conditions, experience of personnel, etc. The operator and other personnel should fully acquaint themselves with

the operator's manual furnished by the manufacturer before operating this machine, and rules for safe operation of equipment should be adhered to at all times.

COMPRESSOR/COUPLER OPTION

An optional 30 CFM, hydraulically powered, belt driven air compressor is available to power railcar brakes, side dump railcar and car coupler release. The coupler, mounted on the rear of the machine, is AAR approved and has an air release feature.



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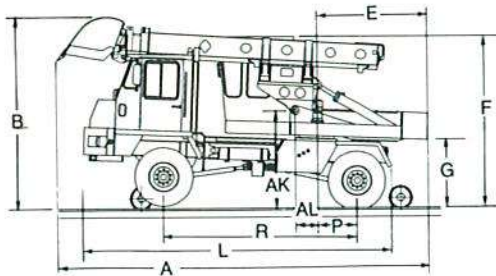
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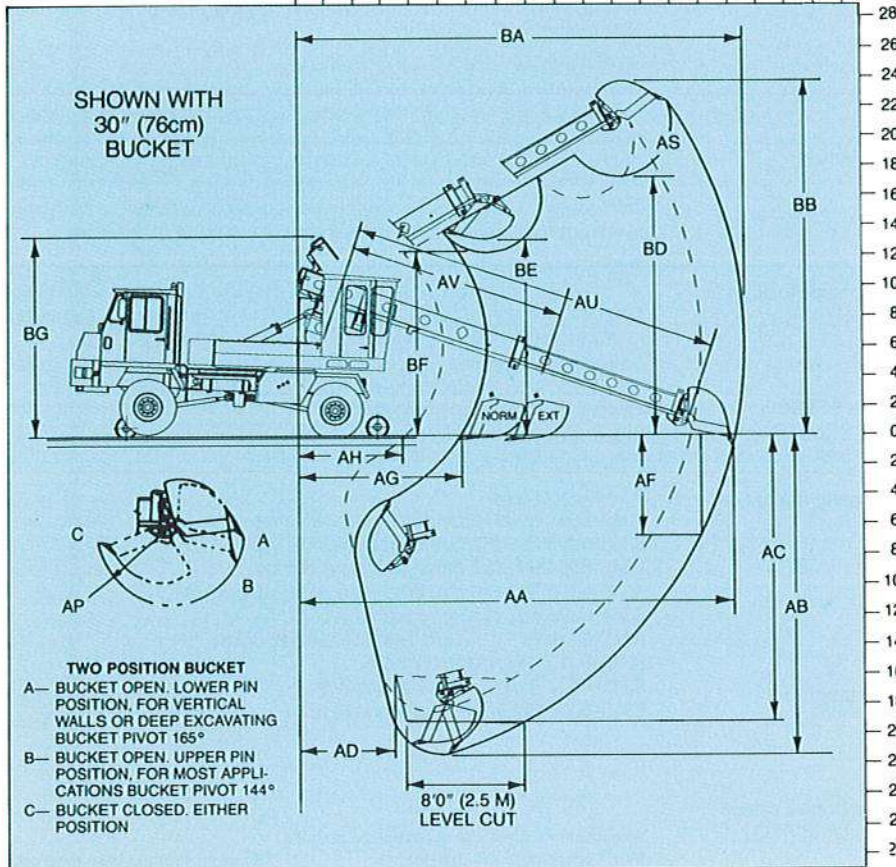
**NOMENCLATURE AND DIMENSIONS FOR
HYDRAULIC EXCAVATORS — SAE J1193 MAR 81**

DIM	ON RUBBER		DESCRIPTION
	NORMAL POSITION	EXTENDED POSITION	
A	24'9" (7.54m)	27'9" (8.46m)	OVERALL LENGTH (BOOM IN RACK) WITH BUCKET
B*	12'3" (3.73m)	12'5" (3.78m)	OVERALL HEIGHT (BOOM IN RACK) WITH BUCKET
C1	8' (2.44m)	8' (2.44m)	WIDTH OF UPPERSTRUCTURE
C3	8' (2.44m)	8' (2.44m)	WIDTH OF CARRIER
E	7'6" (2.29m)	7'6" (2.29m)	SWING CLEARANCE, REAR OF UPPERSTRUCTURE
F	11'3" (3.43m)	11'3" (3.43m)	TOP OF CAB TO GROUNDLINE
G	4'5" (1.35m)	4'5" (1.35m)	CLEARANCE, UPPERSTRUCTURE TO GROUNDLINE
L	20'8" (6.30m)	20'8" (6.30m)	OVERALL LENGTH OF UNDERCARRIAGE
N	12" (30.4cm)	12" (30.4cm)	GROUND CLEARANCE (PER SAE J1234)
P	2'10" (86.4cm)	2'10" (86.4cm)	CENTER OF REAR AXLE TO AXIS OF ROTATION
R	13' (3.96m)	13' (3.96m)	WHEELBASE
AA	27'3" (8.31m)	30'4" (9.25m)	MAXIMUM RADIUS AT GROUNDLINE (165° PIVOT)
AB	18'10" (5.74m)	21'8" (6.60m)	MAXIMUM DIGGING DEPTH (165° PIVOT)
AC	16'4" (4.98m)	19'5" (5.92m)	MAXIMUM DEPTH FOR 8' (2.5 m) LEVEL CUT
AD	7'4" (2.24m)	8'2" (2.49m)	MINIMUM RADIUS OF 8' (2.5 m) LEVEL CUT AT DEPTH "AC"
AF	4'10" (1.47m)	6'4" (1.93m)	MAXIMUM DEPTH OF VERTICAL WALL WHICH CAN BE EXCAVATED
AG	11'1" (3.38m)	14'2" (4.32m)	MINIMUM LEVEL CUT RADIUS WITH BUCKET FLAT ON GROUNDLINE
AH	7'7" (2.31m)	11'5" (3.48m)	MINIMUM RADIUS AT GROUNDLINE
AK	6'3" (1.91m)	6'3" (1.91m)	BOOM PIVOT TO GROUNDLINE
AL	1'6" (45.7cm)	1'6" (45.7cm)	BOOM PIVOT TO AXIS OF ROTATION
AP	3'9" (1.14m)	3'9" (1.14m)	BUCKET TOOTH RADIUS
AS	144° & 165°	144° & 165°	BUCKET PIVOT ANGLE
AU	22'8" (6.91m)	25'8" (7.82m)	MAXIMUM TELESCOPING BOOM LENGTH (BOOM PIVOT TO BUCKET PIVOT)
AV	12'2" (3.71m)	15'2" (4.62m)	MINIMUM TELESCOPING BOOM LENGTH (BOOM PIVOT TO BUCKET PIVOT)
AX	95°	95°	BOOM TILT ANGLE
BA	28' (8.53m)	31' (9.45m)	MAXIMUM RADIUS OF WORKING EQUIPMENT (165° PIVOT)
BB	23'4" (7.11m)	24'11" (7.59m)	MAXIMUM HEIGHT OF WORKING EQUIPMENT
BD	16'9" (5.11m)	18'4" (5.59m)	MINIMUM CLEARANCE OF BUCKET TEETH WITH BUCKET PIVOT AT MAXIMUM HEIGHT
BE	12'2" (3.71m)	13'9" (4.19m)	MINIMUM CLEARANCE OF BUCKET TEETH AT MAXIMUM BOOM HEIGHT
BF	11'4" (3.45m)	12'11" (3.94m)	MIN. CLEARANCE OF FULLY CURLED BUCKET AT MAX. BOOM HEIGHT
BG	13'8" (4.17m)	11'4" (3.45m)	MAXIMUM HEIGHT OF WORKING EQUIPMENT WITH BUCKET BELOW GROUNDLINE

*Dimension with guide wheels lowered is approx. 12'9 (3.88m) / 12'11 (3.94m)



0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38



Boom Raise & Lower

Above ground level	32°
Below ground level	75°
Total arc	107°



Some illustrations may show options.

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TRACKSTAR SPECIFICATIONS

CARRIER

156" (396 cm) wheel base. Frame width: 42" (107 cm), wide-flange beam, 12" (30.5 cm) 35lb/ft (52.08 kg/m). Gross Vehicle Weight: 39,000 lb (17,690 kg) axle rating.

CARRIER CAB

Full instrumentation with electronic warning monitoring system. Tinted safety glass windows. Sliding windows left, right, and rear. Fresh air heater and defroster. Alarm for reverse travel. Fire extinguisher, dome light and suspension seat with seat belt.

ENGINE

Cummins engine: 6BT5.9 turbo charged diesel, liquid cooled, 4 cycle, inline 6 cylinder, 359 cid (5.88 L), 4.02" bore x 4.72" stroke (102 mm x 120 mm), 18.5:1 comp. ratio, 160 hp (119 kw) gross @ 2800 rpm, 143 hp (107 kw) net @ 2800 rpm, 394 ft/lb (534 N.M.) gross torque @ 1700 rpm. Mechanical Governor. Donaldson Air Cleaner. Full flow oil filter with spin-on element.

ELECTRICAL SYSTEM

12 volt, 60-amp alternator with integral voltage regulator. Battery: SAE #8D CIM-900.

COOLING SYSTEM

Fin and tube type radiator with fan shroud. 6-blades 24" (61 cm) fan.

TRANSMISSION

Funk 2000 six speed full powershift. Six speed forward, three reverse and neutral. Ratios: 8.2, 4.64, 3.53, 2.00, 1.41, 0.80.

TORQUE CONVERTER

Funk F20 12.75" three element single stage, 2.1:1 stall torque ratio.

FUEL SYSTEM

65 gal (246 L) fuel tank, primary and secondary fuel filters.

TRAVEL SPEED

Approx. 40 mph (64.4 km/hr) on rubber from carrier cab.
Approx. 25 MPH F or R from upper cab on rail.

DRIVE TRAIN

Spicer needle bearing universal joints.

AXLES

Front: Spicer S1670016, 16,000 lb (7257 kg)
Rear: Rockwell R-255, 23,000 lb (10433 kg) double reduction.
Ratio 7.8:1.
No spin differential on rear axle.

SUSPENSION

Front: 14-leaf spring, 41 $\frac{3}{8}$ " x 3" (105 cm x 7.6 cm), automatic lockout.
Rear: Solid mount

BRAKES

Rockwell Cam-Master, spring set cam brakes on rear. Wedge brakes on front.
Front drums: 17 $\frac{1}{4}$ " x 4" (438 mm x 102 mm)
Rear drums: 16 $\frac{1}{2}$ " x 7" (419 mm x 178 mm)
Spring brake system incorporates emergency and parking brakes on rear axle.

WHEELS

Disc. 10-stud, 11 $\frac{1}{4}$ " (29 cm) bolt circle.

TIRES

Single Front: 15:00 x 22.5 16 ply rated tubeless traction tread.
Dual Rear: 11:00 x 20.0 14 ply rated traction tread.

STEERING

Ross integral hydraulic power steering w/independent hydraulic system including hydraulic pump, flange mounted to torque converter PTO, and two quart reservoir with filter.

HYDRAULIC SYSTEM

Two section pump, flange mounted to torque converter PTO with spline disconnect, 97.1 gpm (366 L/Min) @ 2300 rpm full load, 120° F (48.9C). Four section flow divider.

SWING

Swing motor: 36.5 hp. 8.1 rpm swing.
Swing Parking Brake: Automatic wet swing parking brake, spring set, hydraulic release. Dynamic braking provided by hydraulic system.

OPERATING PRESSURE — 2800 psi max.

Six double acting cylinders.

1 Boom Hoist:

6" (152 mm) bore x 3" (76 mm) rod

1 Tool

5" (127 mm) bore x 3" (76 mm) rod

1 Telescoping

4" (102 mm) bore x 2 $\frac{1}{2}$ " (64 mm) rod x 10'6" (3.2 m) stroke

1 Tilt

5" (127 mm) bore x 3" (76 mm) rod

2 Front Axle Lock-out Cylinders

HYDRAULIC OIL CAPACITY

Reservoir 60 gal (227 L). System 82 gal (310L). Sight gauges.

UPPERSTRUCTURE CAB

All weather cab with tinted safety glass windows, skylight, acoustical treatment, and defroster. 3-way adjustable seat. Signal horn.

UPPER CAB CONTROLS

Two joysticks control upperstructure functions. Joysticks mounted on movable console, adjustable for individual operator convenience.

Joysticks are self-centering: when controls are released, power for movement disengages, and swing brakes set automatically.

Engine controls: Engine start button. Engine stop button. Malfunction warning light & buzzer. Engine throttle lever.

Remote Control:

On rubber — controls for carrier forward/reverse travel, transmission gear range selection, brakes, and steering. Travel speed to 5 MPH.

On Rail — Controls for carrier forward/reverse travel, transmission gear range selection, and brakes. (modulated brake control standard with coupler/train air option). Travel speed to 25 MPH.

Electric operated travel alarm signals remote travel in either direction, and reverse in carrier operation. Meets SAE J-944b Type B classification.

RAIL GEAR

Choice of fold up type or mast type hydraulically raised and lowered with mechanical safety locks.

STANDARD EQUIPMENT CARRIER

Sealed beam headlights, tail lights, back-up lights, stop lights, identification light cluster on front and rear, directional lights, 4-way hazard lights, instrument lights. Gauges for oil pressure, water temperature, dual air tank pressures, fuel, voltmeter, speedometer, tachometer, odometer, converter oil temp. & pressure gauges, hour meter, windshield wiper, windshield washer, wheel and axle wrenches. Mirror system with plane mirrors. Front tow hooks. Tool box. Air dryer.

OPTIONAL EQUIPMENT

Work lights: floodlight on boom cradle, floodlight on top of upperstructure cab. Windshield wiper/washer, upperstructure cab. Propane heater in upper cab (bottle not included).

Vandalism protection kit: Lexan upperstructure cab windows, metal window covers for undercarriage cab, locking bar for engine cover, locking fuel cap, battery cover lock.

Spark arrestor. Rotating beacon.

Rear mounted coupler, train air.

ATTACHMENTS

8345-6002 30" (76 cm) Excavating bucket

8345-6003 24" (61 cm) Excavating bucket

8345-6006 36" (91 cm) Excavating bucket

8345-6005 30" (76 cm) Pavement removal bucket

8345-6026 60" (152 cm) Ditching bucket

8345-6019 66" (168 cm) Ditch cleaning bucket

8345-6015 Single-tooth ripper

8345-6004 8' (2.4 m) Grading blade

8345-5008 Material handling extension