

**BBS**

EXPLORATION



Drill Specifications



**DANGER**  
KEEP HANDS  
CLEAR

Drive Hoist  
Release Lockout  
Latch First







The BBS 37 is a medium to deep capacity drill. The above drill is shown with an air cooled D914 Deutz Engine, Allison AT545 automatic transmission, 12HH swivelhead, hydraulic chuck, side-mounted wireline hoist and single hydraulic pump.

## FEATURES

- The Industry's widest range of spindle torques and speeds through a unique selection of bevel gears and sprocket ratio options.
- Low profile for ease of movement and drill stability.
- Choice of options to meet individual customer requirements.
- Drill may be readily broken down into modules for ease of transportation.
- All components are easily accessible for service.
- Controls are grouped for operator convenience and safety.

In the interest of product improvement BBS Exploration reserves the right to change design, specifications and price without notice.

Nominal Depth Rating			Drilling Speeds / Torques – High Gear			
Single Line Rating 5200 kg (11500 lbs)			Sprocket Ratio	Rpm	Nm	ft lbf
Rod Size	(m)	(ft)				
A*	1130	3700	1.16	1102	750	553
B*	870	2850	1.31:1	975	1215	896
N*	690	2250	1.52:1	841	1409	1039
H*	440	1450				

\* Refers to "O", "Q", "T", or other similar wireline systems.





## SPECIFICATIONS

### Depth Rating - Single Line

Rod Size	(m)	(ft)
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B*	870	2850
N*	690	2250
H*	440	1450

\*Refers to "O", "Q", "T", or other similar wireline systems.

### Diesel Power Unit

Model:	Deutz Diesel D 914
Horsepower:	116 Hp at 2300 rpm
Max Torque:	375 lb-ft at 1500 rpm
Fuel Consumption:	220 g/kWhr at 2300 rpm 0.362 lb/hph
Certifications:	U.S. EPA Non-road Tier 3

Other Diesel engines available on request.  
Diesel engine data based on manufacturers specifications

### Power Train

Transmission:	Allison AT 545 automatic
Ratios:	1st 3.45:1, 2nd 2.25:1, 3rd 1.41:1, 4th 1.00:1, Reverse -5.03:1
T18 Standard Transmission - optional	
Drive Line:	Heavy duty Universal joints
Front End Drive:	Cast Steel
Chain:	Quintuplex 16mm (5/8") pitch
Sprockets:	Optional Ratios available - see options page

### Hydraulic System

Single Pump (psi compensated)	151 L/min (40 gpm US)
Tank Volume	132 L (35 gal US)
Swivelhead circuit (Max Pressure)	6890 kPa (1000 psi)
Hydraulic Chuck circuit	6890 kPa (1000 psi)
Wireline Hoist Circuit (Max Pressure)	10340 kPa (2200 psi)

### Fuel Tank

With Single hydraulic pump	75 litres (20 gal US)
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### Main Hoist

Single line hoist rating:	5200kg (11500 lbs)
Hoist type:	Planetary with brake bands
Drum capacity:	48 m of 16 mm dia. Cable (160 ft of 5/8 in)
Drum diameter:	275 mm (10 3/4 in)
Drum length	230 mm (9 in)
Brake/clutch levers:	Double fulcrum action, over centre lock, swiveling type
Clutch brake drum:	346 mm dia. x 64 mm (13 5/8 in x 2 1/2 in)
Hoist brake drum:	560 mm dia. X 75 mm (22 in x 3 in)

### Wireline Hoist

Rated capacity:	
- With Levelwind	2370 m (7785 ft) of 5 mm (3/16 in) cable
- Without Levelwind	2130 m (7000 ft) of 5 mm (3/16 in) cable
Maximum line speed:	
bare:	84 m/min (276 ft/min)
full:	283 m/min (928 ft/min)
Maximum line pull:	
bare:	930 daN (2046 lbf)
full:	276 daN (608 lbf)

### Hydraulic Swivelhead - 12HH

Drive tube I.D.:	92 mm (3 5/8 in)
Swivel head rotation:	360 degrees
Bevel gear ratios:	
optional:	1.8:1
optional:	1.48:1
Hydraulic pressures:	6890 kPa (1000 psi)
Maximum thrust:	9978 daN (21600 lbf)
Maximum lift:	11383 daN(25100lbf)
Piston rod O.D.:	38 mm (1 1/2 in)
Cylinder I.D.:	102 mm (4 in)
Stroke:	
optional:	610 mm (24 in)
optional:	760 mm (30 in)
optional: Piston Rod O.D.	2.5 in - 24 in or 30 in stroke see options page for more information

### Hydraulic Chuck - 12HH

Chuck holding capacity:	10900 kg (24000 lbs)
Number of jaws:	9
Jaw type:	Replaceable carbide insert
Chuck action:	Spring closed, hydraulic release

See Options page for complete list of available options





## DRILL PERFORMANCE

### Specifications based on BBS 37 Drill equipped with Deutz D914 & Allison AT-545 Automatic Transmission

Front End sprocket ratios	Trans/Ratios AT 545 gear/ range	12HH Swivelhead 1.8:1 Ratio			12HH Swivelhead 1.48:1 Ratio			Hoist			
		1.8:1 gear ratios rpm	spindle ft/lbs	torque nm	1.48:1 gear ratios rpm	spindle ft/lbs	torque nm	hoist lbf	pull daN	hoist fpm	speed m/min
1.16 *	4 (1:1)	1102	553	750	1340	455	617	7251	3225	440	134
	3 (1.41:1)	781	780	1058	950	641	869	10224	4547	312	95
	2 (2.25:1)	490	1243	1685	595	1024	1388	16315	7256	196	59
	1 (3.45:1)	319	1910	2590	388	1570	2129	25016	11126	128	39
1.31:1 **	4 (1:1)	975	625	847	1186	514	697	8189	3643	389	119
	3 (1.41:1)	690	883	1197	841	724	982	11546	5137	276	84
	2 (2.25:1)	433	1407	1908	527	1156	1567	18425	8197	173	53
	1 (3.45:1)	282	2160	2928	344	1771	2401	28252	12568	113	34
1.52:1 ***	4 (1:1)	841	724	982	1022	596	808	9501	4226	335	102
	3 (1.41:1)	596	1022	1386	725	840	1139	13396	5958	238	72
	2 (2.25:1)	374	1629	2209	454	1342	1820	21377	9508	149	45
	1 (3.45:1)	243	2507	3999	296	2058	2790	32778	14580	97	30

### Specifications based on BBS 37 Drill equipped with Deutz D914 & T-18 Standard Transmission

Front End sprocket ratios	Trans/Ratios T-18 gear/ range	12HH Swivelhead 1.8:1 Ratio			12HH Swivelhead 1.48:1 Ratio			Hoist			
		1.8:1 gear ratios rpm	spindle ft/lbs	torque nm	1.48:1 gear ratios rpm	spindle ft/lbs	torque nm	hoist lbf	pull daN	hoist fpm	speed m/min
1.16 *	4 (1:1)	1102	553	750	1340	455	617	7251	3225	440	134
	3 (1.69:1)	652	934	1266	793	768	1041	12254	5451	260	79
	2 (3.09:1)	357	1706	2313	434	1404	1904	22406	9967	142	43
	1 (6.32:1)	174	3501	4746	212	2874	3897	45827	20385	70	21
1.31:1 **	4 (1:1)	975	625	847	1186	514	697	8189	3643	389	119
	3 (1.69:1)	577	1056	1432	702	868	1177	13839	6156	230	70
	2 (3.09:1)	316	1928	2614	384	1586	2150	25303	11255	126	38
	1 (6.32:1)	154	3956	5364	188	3241	4394	51753	23021	62	19
1.52:1 ***	4 (1:1)	841	724	982	1022	596	808	9501	4226	335	102
	3 (1.69:1)	497	1226	1662	605	1007	1365	16057	7143	198	60
	2 (3.09:1)	272	2240	3037	331	1841	2496	29359	13060	109	33
	1 (6.32:1)	133	4581	6211	162	3761	5099	60049	26711	53	16

- \* Standard sprocket ratio (Tailshaft 25-tooth - Mainshaft 29-tooth)
- \*\* Optional sprocket ratio (Tailshaft 29-tooth - Mainshaft 38-tooth)
- \*\*\* Optional sprocket ratio (Tailshaft 25-tooth - Mainshaft 38-tooth)

Spindle rpm, spindle torque, and hoist speed are calculated at 2300 rpm with D914 Deutz engine (standard) and 100% gearing efficiency.

Hoist pulls shown are calculated at maximum engine torque at 1600 rpm and 100%gearing efficiency.

Chart gives single line hoist pulls in all transmission ranges. **The operator must exercise caution that the rated hoist single line pull of 5115 daN (11500 lbs) must not be exceeded when using full torque in lower gears or damage may result.**



## Standard and Optional Equipment

### Standard Equipment

- Deutz D914 Diesel Engine - 116HP@2300 RPM - other engines available on request
- Engine lifting cradle
- Hoist Guard
- Chuck Guard
- Swivel head guard
- Fast retract valve - now mounted at the control panel
- Bit weight indicator gauge
- 8 Bank PVG Valve
- single pump (belt driven) - water pump controlled off of 8 bank valve on its own circuit
- Heavy duty battery - with battery disconnect
- Side mounted wireline hoist, hydraulically powered
- Levelwind for even wireline spooling
- Swivel ring mast with base  
6.1 m (20 ft) pull - 8165 kg (18000 lbs) working load
- Hydraulic hose protection
- Improved safety guards and decals
- Emergency shutoff switch
- Aluminum tower basket, rod rack, and rod slide
- Tower support legs (Aluminum)

### Optional Equipment

#### Transmissions:

- Allison - AT545 automatic transmission (4 spd) - with transmission brake
- Heavy duty T-18 standard transmission (4 spd)

#### 12HH - Hydraulic Swivelhead options: (See Drill performance chart for additional information)

- 610 mm (24 in) stroke, available with either 1.5" O.D. cylinder rods or 2.5" O.D. Heavy Duty cylinder rods
- 762 mm (30 in) stroke, available with either 1.5" O.D. cylinder rods or 2.5" O.D. Heavy Duty cylinder rods
- 1016 mm (40 in) stroke, only available with 2.5" O.D. Heavy Duty cylinder rods
- Swivelhead ratio 1.48:1
- Swivelhead ratio 1.8:1
- BBS Rod Break system

#### 35PH - Hydraulic Swivelhead options: (See 35PH equipped Drill performance chart for additional information)

- 610 mm (24 in) stroke, only available with 2.5" O.D. Heavy Duty cylinder rods
- 762 mm (30 in) stroke, only available with 2.5" O.D. Heavy Duty cylinder rods
- Swivelhead ratio 2.03:1

#### Front End (A-Frame) available ratios:

- 1.16:1 Ratio (tailshaft 25T/mainshaft 29T) - see Drill performance chart for additional information
- 1.31:1 Ratio (tailshaft 29T/mainshaft 38T) - see Drill performance chart for additional information
- 1.52:1 Ratio (tailshaft 25T/mainshaft 38T) - see Drill performance chart for additional information

#### Hydraulic System:

- 7 Bank PVG Valve with Tandem pump group (belt driven) (rear pump dedicated to water pump function with externally mounted control valve)

#### Swivel ring mast with base:

- 9.1 m (30 ft) pull - 8165 kg (18000 lbs) working load





## DRILL PERFORMANCE - 35PH Swivelhead

Specifications based on BBS 37 Drill equipped with Deutz D914 & Allison AT-545 Automatic Transmission

Front End sprocket ratios	Trans/Ratios AT 545 gear/ range	35PH Swivelhead 2.03:1 Ratio			Hoist			
		2.03:1 gear ratios rpm	spindle ft/lbs	torque nm	hoist lbf	pull daN	hoist fpm	speed m/min
1.16 *	4 (1:1)	976	624	846	7251	3225	440	134
	3 (1.41:1)	692	880	1193	10224	4547	312	95
	2 (2.25:1)	434	1403	1902	16315	7256	196	59
	1 (3.45:1)	283	2152	2917	25016	11126	128	39
1.31:1 **	4 (1:1)	864	705	956	8189	3643	389	119
	3 (1.41:1)	613	993	1346	11546	5137	276	84
	2 (2.25:1)	384	1586	2150	18425	8197	173	53
	1 (3.45:1)	250	2437	3304	28252	12568	113	34
1.52:1 ***	4 (1:1)	745	817	1107	9501	4226	335	102
	3 (1.41:1)	528	1153	1563	13396	5958	238	72
	2 (2.25:1)	331	1840	2494	21377	9508	149	45
	1 (3.45:1)	216	2820	3823	32778	14580	97	30

Specifications based on BBS 37 Drill equipped with Deutz D914 & T-18 Standard Transmission

Front End sprocket ratios	Trans/Ratios T-18 gear/ range	35PH Swivelhead 2.03:1 Ratio			Hoist			
		2.03:1 gear ratios rpm	spindle ft/lbs	torque nm	hoist lbf	pull daN	hoist fpm	speed m/min
1.16 *	4 (1:1)	976	624	846	7251	3225	440	134
	3 (1.69:1)	578	1054	1429	12254	5451	260	79
	2 (3.09:1)	316	1928	2614	22406	9967	142	43
	1 (6.32:1)	154	3956	5363	45827	20385	70	21
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	3 (1.69:1)	511	1192	1616	13839	6156	230	70
	2 (3.09:1)	280	2175	2949	25303	11255	126	38
	1 (6.32:1)	136	4479	6072	51753	23021	62	19
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	3 (1.69:1)	441	1381	1872	16057	7143	198	60
	2 (3.09:1)	241	2528	3427	29359	13060	109	33
	1 (6.32:1)	118	5163	7000	60049	26711	53	16

- \* Standard sprocket ratio (Tailshaft 25-tooth - Mainshaft 29-tooth)
- \*\* Optional sprocket ratio (Tailshaft 29-tooth - Mainshaft 38-tooth)
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Spindle rpm, spindle torque, and hoist speed are calculated at 2300 rpm with D914 Deutz engine (standard) and 100% gearing efficiency.

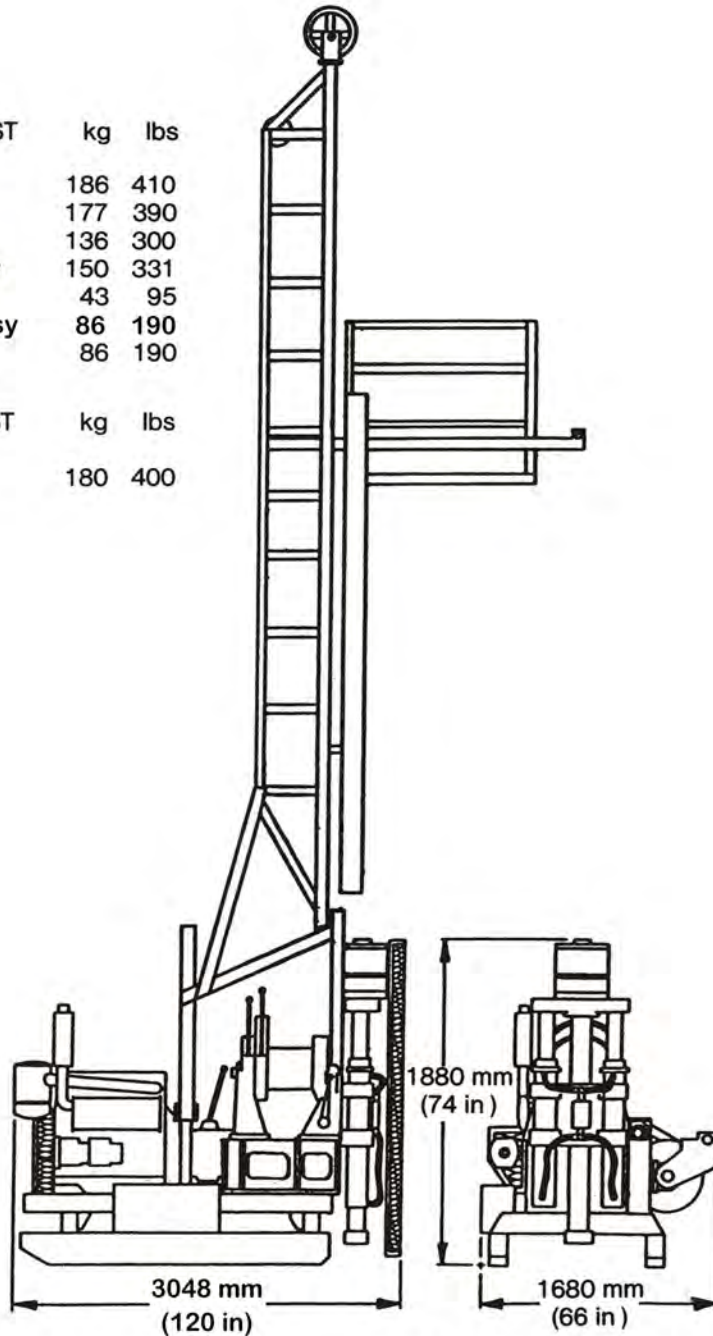
Hoist pulls shown are calculated at maximum engine torque at 1600 rpm and 100%gearing efficiency.

Chart gives single line hoist pulls in all transmission ranges. **The operator must exercise caution that the rated hoist single line pull of 5115 daN (11500 lbs) must not be exceeded when using full torque in lower gears or damage may result.**

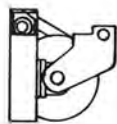
## WEIGHTS AND DIMENSIONS

20 FT PULL MAST	kg	lbs
Upper Section	186	410
Lower Section	177	390
Mast Base	136	300
Basket Assembly	150	331
Backstay Legs	43	95
Crown Block Assy	86	190
Raise Cylinders	86	190

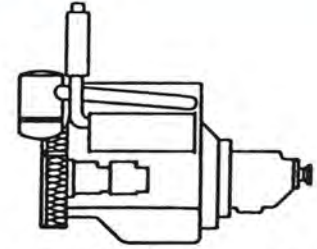
30 FT PULL MAST	kg	lbs
Insert Section	180	400



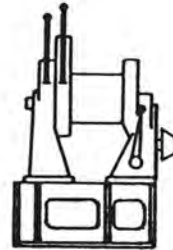
	kg	lbs
Complete Drill Assy	3032	6685



	kg	lbs
W/L Hoist Assy Complete	227	500
LEVELWIND Only	54	120



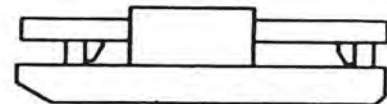
POWER UNIT	kg	lbs
Automatic trans	182	400
Deutz D 914	408	925
Transmission T-18	84	185



HOIST & FRONT END ASSY	kg	lbs
Hoist Assy and "A" Bracket	363	800
Front End Assy	181	400
Sub Base	76	168



	kg	lbs
12 HH Swivelhead Complete	345	760
Chuck Only	113	250



	kg	lbs
Frame Assy Complete	500	1100
Fuel & Hyd Tanks Only	75	165

\*\*\*\* Dimensions and weights are approximate only. When more accurate values are required, contact factory. \*\*\*\*





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