P&H KOBELCO

# T500

## HYDRAULIC TRUCK CRANE

**45Mton maximum crane load**
**56.5m maximum boom and jib**
**5-section boom**


Bulletin No. KP-T500-4

# 45-ton crane with g
# reliability and perfo


## High Reliability for Handling Heavy Loads and Operating at Elevated Levels

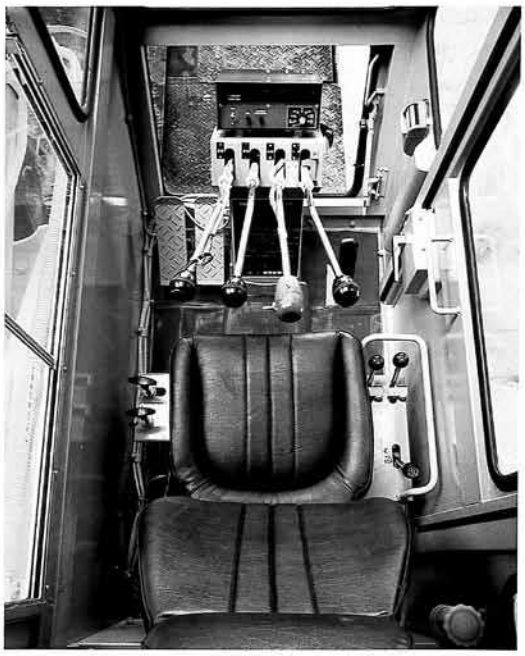
Comfortably capable of handling 45 tons with a 10.92-meter long boom (operating radius: 3m) and 5.5 tons with a 42-meter long boom (operating radius: 13m). P&H T500 with its expanded capacity affords a greatly extended range of applications in handling heavy objects and working at elevated levels.

## Deluxe Cab Assuring Safe, Comfortable Driving

A relaxed driving position can be selected. Length of control levers permits easy operation and positioning of the reclining operator's seat can be freely adjusted. Easily readable meters and instruments orderly arranged and a roomy and bright cab assure safe operation and comfortable driving.

## Minimum Front Overhang in Truck Cranes of this Class

Front overhang is only 1.675 meters, thus maneuverability is the best among truck cranes of this class. It can be moved around effortlessly even in limited work site areas.



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### Three Independent Pumps Insure Powerful and Speedy Crane Operation

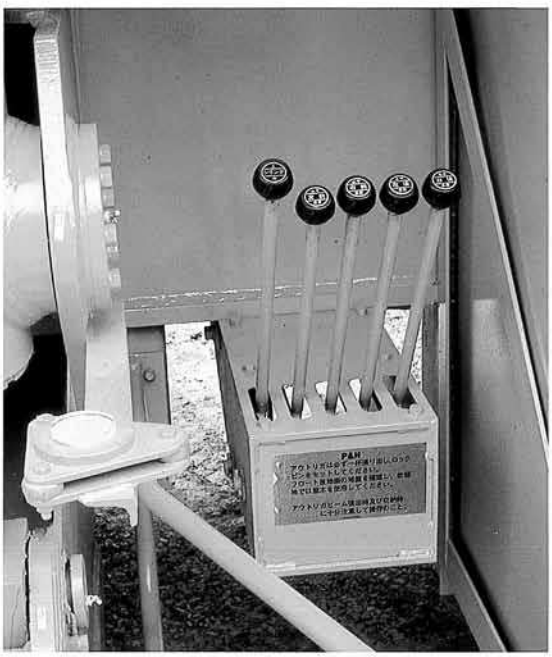
Three individual operations—hoisting, boom extension and raising, and swing—are driven by independent pumps, which means that smooth, composite operations are easily performed with stable power and constant speed.

The hydraulic circuit employs a special control valve which allows selection of high or low speed for either the main or auxilliary winches.

Moreover, constant control in the low speed zone is possible without being adversely affected by load weight; and smooth subtle inching operations can also be performed as desired.

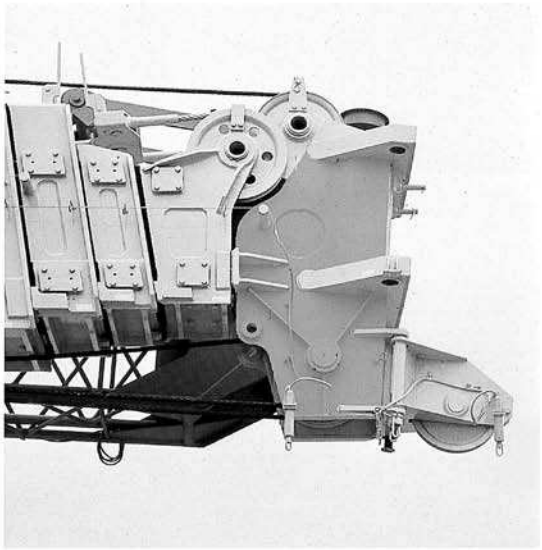
### Setting of the Outrigger Can Be Effected Accurately and Quickly by a Single Lever

Simply set the vertical/lateral selector levers of each cylinder. The X-shaped outrigger can be accurately and quickly set by merely operating the main lever. Extension and height adjustment can be carried out separately and freely. Automatic housing float requires no mounting and dismounting.



### Jib with Adjustable Offset Angle is Employed for Extended Uses

The offset angle of the jib can be set either at 10 or 30 degrees depending on the nature of the operation. Highly suitable for operations at limited work site such as in the construction of a building.



### Two-stage Jib Can Be Easily Extended and Retracted

The two-stage horizontal holding type jib consists of a lattice type base tip. It can be extended and retracted with great ease.

### An Accumulator Is Incorporated in the Clutch Circuit of the Hoisting Drum

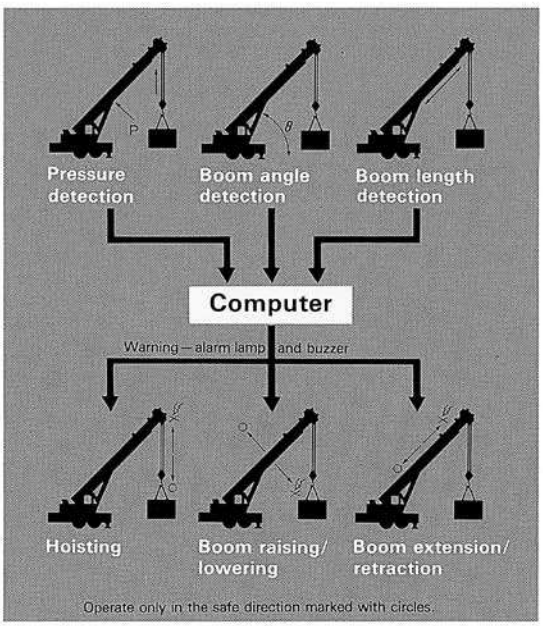
Using a clutch circuit incorporating an accumulator, response is excellent and maneuverability is greatly improved.

### Auxiliary sheave for sharply increased operating efficiency.

An auxiliary sheave serving as a small-sized jib is fitted as a standard feature. As only one sheave is used, light loads can also be handled with ease.

### Computer Controlled Safety System (Optional)

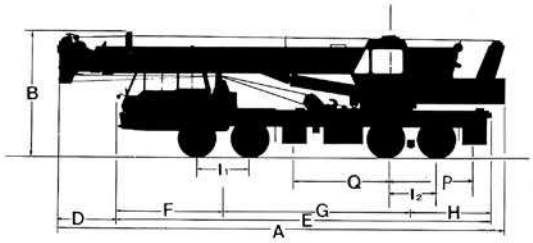
The overloading alarm device comprises a highly reliable CCS (Computer Control System). The computer has a memory that stores data on a whole series of load limits across the complete operating range. It digitally displays the actual load, detected from the boom raising pressure, boom angle and boom length, and the load limit for a specific operating position, in tons. If the actual load exceeds 90% of the load limit, the pre-alarm lamp lights up, and when it reaches the load limit, the alarm lamp lights up, and the buzzer sounds again. In addition the hydraulic brake valve is applied automatically when swing control level is in neutral position. (manual brake for swing lock): so that the operator can always work in complete safety. Various other devices mentioned below are provided, so as to assure safety of total crane operations.

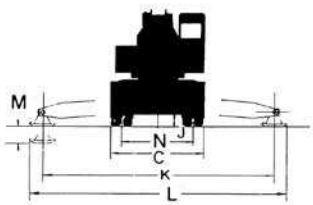


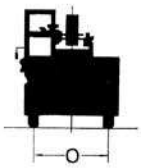

### Standard equipment and a buzzer sounds

• Overwinding alarm • Erratic boom extension/ retraction prevention device • Safety valve for each hydraulic circuit • Winch drum lock • Winch brake lock • Automatic swivel disc brake • Hook wire clamp

# GENERAL DIMENSIONS




| | Nissan KG53T Left Hand Right Hand drive m/(ft) |
|---|---|
| **A.** Overall length in travelling condition | 13.07 (42.88) |
| **B.** Overall height (R.H. drive) | 3.66 (12.01) |
| **B-1.** Overall height (L.H. drive) | 4.05 (13.29) |
| **C.** Overall width | 2.82 (9.25) |
| **D.** Front overhang | 1.675 (5.50) |
| **E.** Overall length of carrier | 10.705 (35.12) |
| **F.** Center of front axle to front of carrier | 2.975 (9.76) |
| **G.** Center of front axle to center of rear bogie | 5.215 (17.11) |
| **H.** Center of rear bogie to rear end of carrier | 2.515 (8.25) |
| **$I_1$** Distance between Axles (front) | 1.47 (4.82) |
| **$I_2$** Distance between Axles (rear) | 1.40 (4.59) |
| Ground clearance | 0.235 (0.77) |
| **K.** Effective length of outriggers | 6.60 (21.65) |
| **L.** Overall length of outriggers | 7.07 (23.20) |
| **M.** Wheel ground clearance—outrigger cyl's ext'ed. | 0.16 (0.52) |
| **N.** Tread width (rear) | 2.11 (6.92) |
| **O.** Tread width (front) | 2.23 (7.32) |
| **P.** Distance from centerline of rotation to rear outrigger | 2.32 (7.61) |
| **Q.** Distance from centerline of rotation to front outrigger | 2.93 (9.61) |

# SPECIFICATIONS

## UPPER

**SWING UNIT:** Hydraulic radial piston motor driving through planetary reducer, 360° continuous rotation
Swing speed ..... 2.1 rpm

**SWING BRAKE:** Hydraulic brake valve is applied automatically when swing control lever is in neutral position. (Manual brake for swing lock.)

**SLEWING RING:** Single row ball bearing swing circle—internal spur gear and integral type swing gear.

**MAIN WINCH:** Mounted on rear part of revolving frame. Driven with hydraulic radial piston motor, through single stage gear reducer and clutch.
Clutch type: Shoe clutch expanded with hydraulic power.
Brake type: Band brake operated with wheel cylinder and master cylinder.
Line speed (3rd layer): Low speed 49 m/min. High speed 99 m/min.
Cable size: 18 mm dia., 185 m Length.

**AUXILIARY WINCH:** Mounted on rear part of revolving frame. Driven with hydraulic radial piston motor, through single stage gear reducer and clutch.
Clutch type: Shoe clutch expanded with hydraulic power.
Brake type: Band brake operated with wheel cylinder and master cylinder.
Line speed (2nd layer): Low speed 44 m/min. High speed 90 m/min.
Cable size: 18 mm dia., 125 m length.

**BOOM HOIST:** One full power cylinder with holding valve
Speed (raise) 0°—80° ..... 64 sec.

**BOOM TELESCOPE:** Power telescoping by three hydraulic cylinders with holding valves and wire ropes.
Speed (extend)10.92 m—42 m ..... 113 sec.

**CONTROLS:** Four adjustable hand control levers for swing, telescope, boom hoist and winch, two short hand levers for main and auxiliary winch clutch ON-OFF. One short hand lever for swing brake lock.
One selective switch for telescoping cylinder.
Foot pedal for engine throttle control.
Two brake pedals for main and auxiliary winch drum brake.

**OPERATORS CAB:** All weather type, with full vision and safety glass throughout, carrier engine start and shut off switches incorporated, attached.

**SAFETY DEVICES:** Over load warning device with lifting load, boom length and boom angle indicators. Hydraulic safety valves, check valves and holding valves.

## HYDRAULIC SYSTEM

**PUMP DRIVE:** Carrier transmission PTO with disconnect feature for traveling.

**PUMP:** One set of three tandem gear pump

**OIL TANK CAPACITY** ..... 620 ℓ

**OIL RESERVOIR:** Mounted on carrier, 620 liters capacity.

**CONTROL VALVES:** One set each of 4-track, 4-way valves and 1-stack, 4-way valves.

## CARRIER

**MAKE and MODEL:** NISSAN DIESEL MOTOR, KG53T (8 x 4)

**TYPE:** Front engine, forward control, left or right side offset cab.

**POWER PLANT:** NISSAN DIESEL MOTOR RD8 DIESEL ENGINE, 8 cyl. 4 cycle, 315 ps at 2300 rpm.



**FUEL TANK CAPACITY:** 300 liters

**CLUTCH:** Single dry plate, hydraulically operated.

**TRANSMISSION:** 5 speeds forward, 1 reverse.

**SUB TRANSMISSION:** High and low.

**BRAKES-SERVICE:** Dual circuit air brake, 8 wheels internal expanding

**-PARKINGS:** Mechanically operated by hand lever, acting on drum at transmission case rear.

**-AUXILIARY:** Exhaust engine brake.

**RADIATOR:** Corrugated fin type.

**STEERING:** Recirculating ball screw type with linkage power assistance.



**FRAME:** All welded construction of high tensile steel, box type.

**SUSPENSION:** Front: Semi-elliptic leaf springs with shock absorbers.
Rear: Equalizer beams with torque rods.

**FRONT AXLE:** NISSAN DIESEL MOTOR, steel tube section beam. Reverse "ELLIOT" type.

**REAR AXLE UNIT:** NISSAN DIESEL MOTOR, full floating, cast steel housing, in-line tandem type, single reduction hypoid gear.

**OUTRIGGERS:** P & H hydraulic scissors type; 8 double acting hydraulic cylinders for independent horizontal and vertical motion of each beam.



**TIRES:** Front; Single x 4 12:00—20—18PR
Rear; Double x 4 12:00—20—18PR

**CAB:** Steel, two crew type, offset left or right side of engine.

**LIGHTS:** Front; dual head lights, turn signal and directional signal light, parking light.
Rear; license plate light, back light, directional signal lights, stop, tail and parking lights, reflectors.
24 volt electrical system.

**EQUIPMENT:** Full reclining driver's seat, horn, rear view mirrors, illuminated instrument panel with speedometer, tachometer, ammeter, fuel gauge, oil pressure gauge, water temperature gauge, air pressure gauge, low air pressure indicator light, windshield wipers, flashers, PTO tachometer with hour meter.
Front bumper, front and rear fenders, skirts, spare tire, hooks front and rear, two 12-volt batterys, rigging compartment, tools and accessories.
Mounted on carrier frame, securely fixed when traveling.

**PERFORMANCE:** Gross vehicle weight (with jib, spare tire and crew 2 men (approx.)) 38,510 kg

**MAX. SPEED:** 71 km/h

**GRADE ABILITY:** 0.207 (tan $\theta$)

**MIN. TURNING RAD:** 11.8 m

## ATTACHMENTS

**BOOM** Five section, one base and four power telescoping sections, made from high tensile steel.
Five boom point sheaves with roller bearings.
Length fully retracted ..... 10.92 m
Length fully extended ..... 42 m

**HOOK BLOCK:** Main; 21 metric tons, three sheaves with swivel hook and safety latch.
45 metric tons, five sheaves with swivel hook and safety latch.
Jib; weighted ball with swivel hook and safety latch.



**JIB:** 2-Section Jib.
Outer Jib; Lattice construction fabricated with tubular high tensile steel tube.
Inner Jib; Lattice construction fabricated with tubular high tensile steel tube.
Length fully retracted ..... 9 m
Length fully extended ..... 14.5 m

## AXLE LOAD

with jib, spare tire and crew 2 men (approx.)

| | |
|---|---|
| Total | 38,510 kg |
| Front axle | 14,740 kg |
| Rear axle | 23,770 kg |

# LIFTING CAPACITIES

## Main Boom Rated Lifting Capacity, kg (lb.)

With outriggers fully extended with front jack(opt.) ——360°
With outriggers fully extended without front jack (opt.)——over side and rear.

| Operating Radius m (ft) | Boom Length, m (ft) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 10.92 (35.83) | 18.69 (61.32) | 22.58 (74.08) | 26.46 (86.81) | 34.23 (112.30) | 39 (127.95) | 42 (137.79) |
| 3 (9.84) | 45,000 (99,207) | 27,000 (59,524) | | | | | |
| 3.5 (11.48) | 40,500 (89,286) | 27,000 (59,524) | | | | | |
| 4 (13.12) | 36,500 (80,468) | 27,000 (59,524) | 21,000 (46,297) | | | | |
| 4.5 (14.76) | 33,000 (72,752) | 27,000 (59,524) | 21,000 (46,297) | | | | |
| 5 (16.40) | 30,200 (66,579) | 27,000 (59,524) | 21,000 (46,297) | 16,500 (36,376) | | | |
| 5.5 (18.04) | 27,500 (60,627) | 24,900 (54,895) | 21,000 (46,297) | 16,500 (36,376) | | | |
| 6 (19.68) | 24,000 (52,910) | 22,600 (49,824) | 21,000 (46,297) | 16,500 (36,376) | | | |
| 6.5 (21.33) | 20,800 (45,856) | 20,500 (45,194) | 19,500 (42,990) | 16,500 (36,376) | 12,000 (26,455) | | |
| 7 (22.97) | 18,350 (40,454) | 18,050 (39,793) | 18,050 (39,793) | 16,500 (36,376) | 12,000 (26,455) | 8,000 (13,637) | |
| 7.5 (24.61) | 16,300 (35,935) | 16,100 (35,494) | 16,100 (35,494) | 15,300 (33,730) | 12,000 (26,455) | 8,000 (13,637) | |
| 8 (26.25) | 14,550 (32,077) | 14,150 (31,195) | 14,150 (31,195) | 14,150 (31,195) | 12,000 (26,455) | 8,000 (13,637) | 5,500 (12,125) |
| 8.5 (27.89) | 13,100 (28,880) | 12,700 (27,998) | 12,700 (27,998) | 12,700 (27,998) | 11,350 (25,022) | 8,000 (13,637) | 5,500 (12,125) |
| 9 (29.53) | 11,800 (26,014) | 11,500 (25,353) | 11,500 (25,353) | 11,500 (25,353) | 10,750 (23,699) | 8,000 (13,637) | 5,500 (12,125) |
| 9.5 (31.17) | | 10,400 (22,928) | 10,400 (22,928) | 10,400 (22,928) | 10,200 (22,487) | 8,000 (13,637) | 5,500 (12,125) |
| 10 (32.80) | | 9,500 (20,944) | 9,500 (20,944) | 9,500 (20,944) | 9,650 (21,274) | 7,700 (16,975) | 5,500 (12,125) |
| 11 (36.09) | | 7,950 (17,527) | 7,950 (17,527) | 7,950 (17,525) | 8,650 (19,070) | 7,100 (15,653) | 5,500 (12,125) |
| 12 (39.37) | | 6,700 (14,771) | 6,700 (14,771) | 6,700 (14,771) | 7,550 (16,645) | 6,600 (15,550) | 5,500 (12,125) |
| (42.65) | | 5,650 (12,456) | 5,650 (12,456) | 5,650 (12,456) | 6,500 (14,330) | 6,150 (13,558) | 5,500 (12,125) |
| (45.93) | | 4,750 (10,472) | 4,750 (10,472) | 4,750 (10,472) | 5,700 (12,566) | 5,550 (12,236) | 5,200 (11,464) |
| 16 (54.49) | | 3,350 (7,385) | 3,350 (7,385) | 3,350 (7,385) | 4,350 (9,590) | 4,350 (9,590) | 4,650 (10,251) |
| 18 (59.05) | | | 2,250 (4,960) | 2,250 (4,960) | 3,350 (7,385) | 3,450 (7,606) | 3,850 (8,488) |
| 20 (65.91) | | | 1,450 (3,197) | 1,450 (3,197) | 2,500 (5,512) | 2,700 (5,952) | 3,100 (6,834) |
| 22 (72.18) | | | | 800 (1,764) | 1,800 (3,968) | 2,000 (4,409) | 2,400 (5,291) |
| 23 (75.46) | | | | 500 (1,102) | 1,500 (3,307) | 1,700 (3,748) | 2,100 (4,630) |
| 24 (78.74) | | | | | 1,250 (2,756) | 1,500 (3,307) | 1,800 (3,968) |
| 26 (85.30) | | | | | 750 (1,653) | 1,000 (2,205) | 1,300 (2,866) |
| 28 (9.86) | | | | | 350 (772) | 600 (1,323) | 850 (1,874) |
| 30 (98.42) | | | | | | 400 (882) | 550 (1,213) |
| 31 (101.70) | | | | | | | 400 (882) |

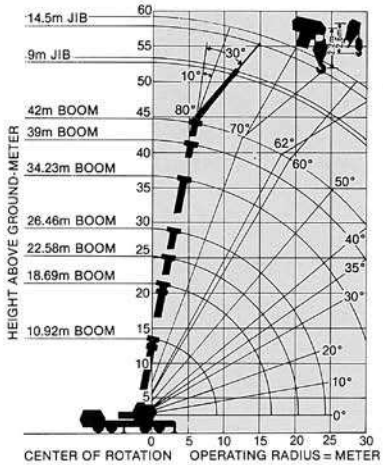
## Jib Rated Lifting Capacity kg (lb.)

| Boom Angle (deg.) | Jib 9m (29.53) | | Jib 14.5m (47.57) | |
|---|---|---|---|---|
| | OFFSET 10° | OFFSET 30° | OFFSET 10° | OFFSET 30° |
| 80° | 2,600 (5,732) | 1,800 (3,968) | 1,600 (3,527) | 1,000 (2,205) |
| 79.5° | 2,600 (5,732) | 1,800 (3,968) | 1,600 (3,527) | 1,000 (2,205) |
| 79° | 2,480 (5,467) | 1,740 (3,836) | 1,600 (3,527) | 1,000 (2,205) |
| 78.5° | 2,370 (5,225) | 1,680 (3,704) | 1,530 (3,373) | 1,000 (2,205) |
| 76° | 1,940 (4,277) | 1,440 (3,175) | 1,250 (2,756) | 910 (2,006) |
| 74° | 1,670 (3,682) | 1,300 (2,866) | 1,080 (2,381) | 830 (1,830) |
| 72° | 1,440 (3,175) | 1,180 (2,601) | 960 (2,116) | 750 (1,653) |
| 70° | 1,240 (2,734) | 1,070 (2,359) | 850 (1,874) | 670 (1,477) |
| 68° | 1,060 (2,337) | 960 (2,116) | 740 (1,631) | 600 (1,323) |
| 66° | 910 (2,006) | 860 (1,896) | 640 (1,411) | 520 (1,146) |
| 64° | 780 (1,720) | 760 (1,675) | 540 (1,190) | 440 (970) |
| 62° | 670 (1,477) | 660 (1,455) | 450 (992) | 360 (794) |
| 60° | 570 (1,257) | | 360 (794) | |

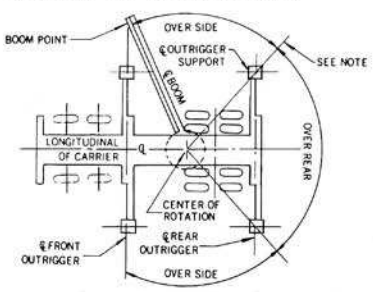
**NOTE:**

1. Operating radius is horizontal distance from centerline of rotation to a vertical line through the gravity center of the load.
2. The ratings of main boom include weight of main hook (45 ton hook—450 kg, 21 ton hook—250 kg).
3. The ratings of jib boom include weight of jib hook-abt. 100 kg.
4. Areas on plate where no ratings are shown, operation is not intended or approved.
5. Ratings are contingent upon freely suspended loads and machine standing on a firm, level, uniformly supporting surface.
6. Gross crane ratings shown do not exceed 78% of tipping loads.
7. Ratings above based on over side and rear with outriggers being fully extend.
8. Ratings above the heavy line are based on the machine hydraulic or structual competence and not on machine stability.

## WORKING RANGES




## AREAS OF OPERATION



P&H KOBELCO T500

**NOTE:** In furtherance of our policy of continual product improvement all designs and specifications are subject to change without advance notice. Data herein is informational in nature and shall not be construed to warrant suitability of the machine for any particular purpose as performance may vary with the conditions encountered.
These statement are correct at time of gone to press.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