

## Dando MK 1000 Rotary Head

Similar to the MK 500, this model is fitted with a twin worm and single wheel gear totally enclosed in an oil bath case. Again, the head incorporates a 150mm I.D hollow spindle which is mounted on taper roller bearings but the MK 1000 is powered by twin piston motors providing controlled rotation and torque in forward and reverse.



An example of a Dando MK1000 Power Swivel fitted to a Watertec 40 complete with 2" Water Swivel and drill rod drive coupling.

# Dando MK 1000 Rotary Head

## Twin Piston motor arrangement.

With reference to our 40+ton rigs, Dando Drilling use a valve with a 140 /Lt slice (i.e.70lt motor) and pressure at 315 bar (4568 PSI). Based on this and with a hydraulic piston motor you will see the following speed and torque:

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### For 20:1 Ratio

High torque mode:-

Torque = 15398 Nm (11317 Lb/ft) @ 43 RPM

High speed mode:-

Torque = 3850 Nm (2830 Lb/ft) @ 175 RPM

### For 12 ½:1 Ratio

High torque mode:-

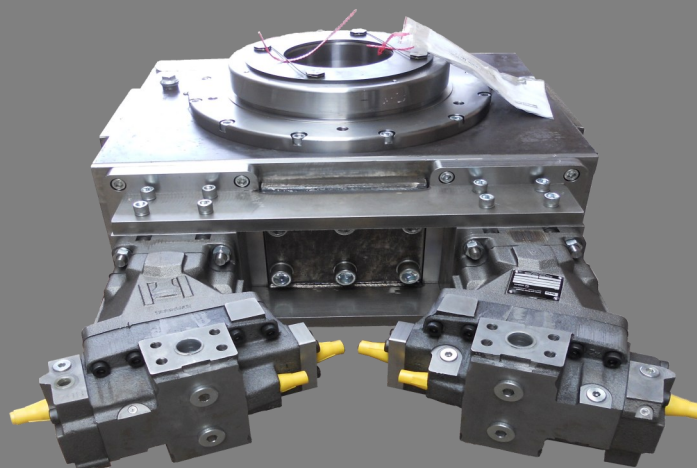
Torque = 9624 Nm (7073 Lb/ft) @ 70 RPM

High speed mode:-

Torque = 2406 Nm (1768 Lb/ft) @ 280 RPM

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**Please note:-** These are the results when fitted to a Dando type circuit and not the actual performance that the Rotary head and hydraulic motors are capable of. The piston motor can run with a pressure of 420 bar (6090PSI) and an RPM of 5000, therefore results will vary depending on your hydraulic capability.



# Dando MK 1000 Rotary Head

## Twin Gear motor arrangement

The torque advised below is a max because of the pressure limitation of each motor and the speed is based on 140 Lt.

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### For 20:1 Ratio

High torque mode:-

Torque = 18984 Nm (14000 Lb/ft) @ 15 RPM

High speed mode:-

Torque = 9492 Nm (7000 Lb/ft) @ 30 RPM

### For 12 ½:1 Ratio

High torque mode:-

Torque = 12373 Nm (9125 Lb/ft) @ 25 RPM

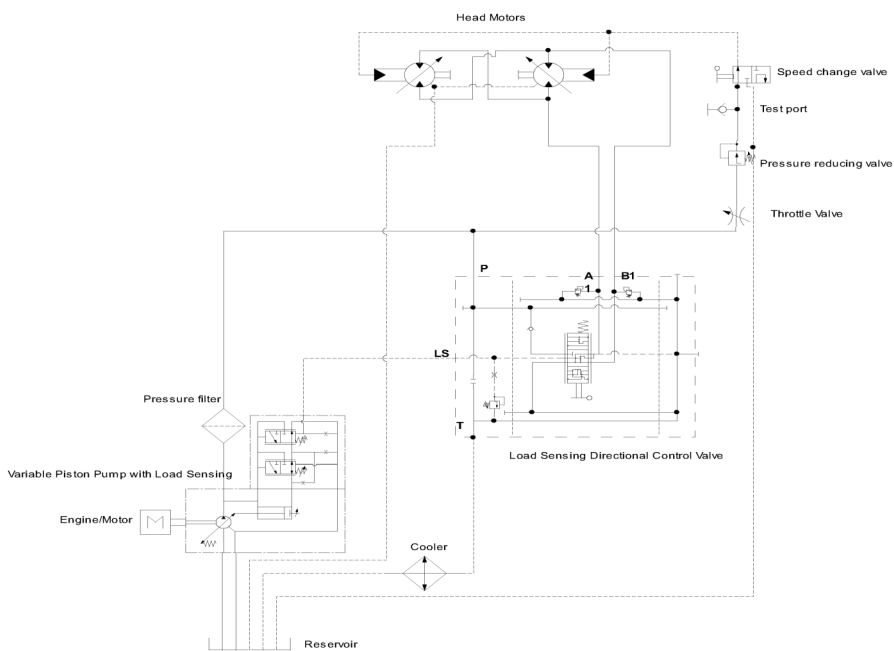
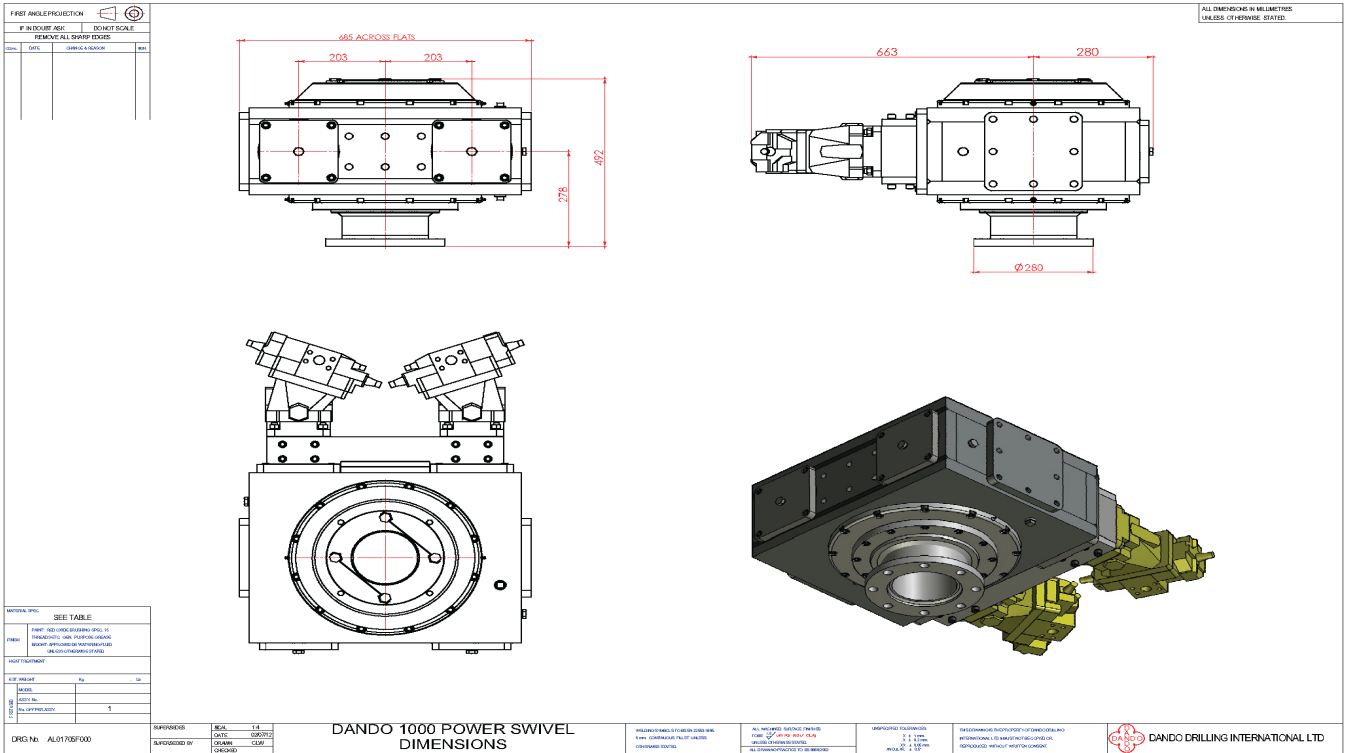
High speed mode:-

Torque = 6186 Nm (4562 Lb/ft) @ 280 RPM

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**Please note:** - The 3" Gear motor is limited to 2500psi and is approximately 0.2245 Lt/rev. The motor is capable of 2000 RPM @ 365 Lt/min and performance can vary infinitely depending on the hydraulic supply system. The above speeds and torque figures are based on these details.

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### Circuit with Variable Piston Pump with Load sensing.

Control Console does not include Pressure Filter, Variable Piston Pump and Engine/Motor and are shown for reference only

SUPERSEDES	SCALE	TTL
	DATE	
SUPERSEDED BY	DRAWN CIRCUITS	

CIRCUIT DIAGRAM FOR CONTROL PANEL AL01740F001

WILLIAM-SYMPSON TO BE IN 22831-140  
 6-10-11, 12-13-11, 14-15-11, 16-17-11, 18-19-11, 20-21-11, 22-23-11, 24-25-11, 26-27-11, 28-29-11, 30-31-11, 32-33-11, 34-35-11, 36-37-11, 38-39-11, 40-41-11, 42-43-11, 44-45-11, 46-47-11, 48-49-11, 50-51-11, 52-53-11, 54-55-11, 56-57-11, 58-59-11, 60-61-11, 62-63-11, 64-65-11, 66-67-11, 68-69-11, 70-71-11, 72-73-11, 74-75-11, 76-77-11, 78-79-11, 80-81-11, 82-83-11, 84-85-11, 86-87-11, 88-89-11, 90-91-11, 92-93-11, 94-95-11, 96-97-11, 98-99-11, 100-101-11, 102-103-11, 104-105-11, 106-107-11, 108-109-11, 110-111-11, 112-113-11, 114-115-11, 116-117-11, 118-119-11, 120-121-11, 122-123-11, 124-125-11, 126-127-11, 128-129-11, 130-131-11, 132-133-11, 134-135-11, 136-137-11, 138-139-11, 140-141-11, 142-143-11, 144-145-11, 146-147-11, 148-149-11, 150-151-11, 152-153-11, 154-155-11, 156-157-11, 158-159-11, 160-161-11, 162-163-11, 164-165-11, 166-167-11, 168-169-11, 170-171-11, 172-173-11, 174-175-11, 176-177-11, 178-179-11, 180-181-11, 182-183-11, 184-185-11, 186-187-11, 188-189-11, 190-191-11, 192-193-11, 194-195-11, 196-197-11, 198-199-11, 200-201-11, 202-203-11, 204-205-11, 206-207-11, 208-209-11, 210-211-11, 212-213-11, 214-215-11, 216-217-11, 218-219-11, 220-221-11, 222-223-11, 224-225-11, 226-227-11, 228-229-11, 230-231-11, 232-233-11, 234-235-11, 236-237-11, 238-239-11, 240-241-11, 242-243-11, 244-245-11, 246-247-11, 248-249-11, 250-251-11, 252-253-11, 254-255-11, 256-257-11, 258-259-11, 260-261-11, 262-263-11, 264-265-11, 266-267-11, 268-269-11, 270-271-11, 272-273-11, 274-275-11, 276-277-11, 278-279-11, 280-281-11, 282-283-11, 284-285-11, 286-287-11, 288-289-11, 290-291-11, 292-293-11, 294-295-11, 296-297-11, 298-299-11, 300-301-11, 302-303-11, 304-305-11, 306-307-11, 308-309-11, 310-311-11, 312-313-11, 314-315-11, 316-317-11, 318-319-11, 320-321-11, 322-323-11, 324-325-11, 326-327-11, 328-329-11, 330-331-11, 332-333-11, 334-335-11, 336-337-11, 338-339-11, 340-341-11, 342-343-11, 344-345-11, 346-347-11, 348-349-11, 350-351-11, 352-353-11, 354-355-11, 356-357-11, 358-359-11, 360-361-11, 362-363-11, 364-365-11, 366-367-11, 368-369-11, 370-371-11, 372-373-11, 374-375-11, 376-377-11, 378-379-11, 380-381-11, 382-383-11, 384-385-11, 386-387-11, 388-389-11, 390-391-11, 392-393-11, 394-395-11, 396-397-11, 398-399-11, 400-401-11, 402-403-11, 404-405-11, 406-407-11, 408-409-11, 410-411-11, 412-413-11, 414-415-11, 416-417-11, 418-419-11, 420-421-11, 422-423-11, 424-425-11, 426-427-11, 428-429-11, 430-431-11, 432-433-11, 434-435-11, 436-437-11, 438-439-11, 440-441-11, 442-443-11, 444-445-11, 446-447-11, 448-449-11, 450-451-11, 452-453-11, 454-455-11, 456-457-11, 458-459-11, 460-461-11, 462-463-11, 464-465-11, 466-467-11, 468-469-11, 470-471-11, 472-473-11, 474-475-11, 476-477-11, 478-479-11, 480-481-11, 482-483-11, 484-485-11, 486-487-11, 488-489-11, 490-491-11, 492-493-11, 494-495-11, 496-497-11, 498-499-11, 500-501-11, 502-503-11, 504-505-11, 506-507-11, 508-509-11, 510-511-11, 512-513-11, 514-515-11, 516-517-11, 518-519-11, 520-521-11, 522-523-11, 524-525-11, 526-527-11, 528-529-11, 530-531-11, 532-533-11, 534-535-11, 536-537-11, 538-539-11, 540-541-11, 542-543-11, 544-545-11, 546-547-11, 548-549-11, 550-551-11, 552-553-11, 554-555-11, 556-557-11, 558-559-11, 560-561-11, 562-563-11, 564-565-11, 566-567-11, 568-569-11, 570-571-11, 572-573-11, 574-575-11, 576-577-11, 578-579-11, 580-581-11, 582-583-11, 584-585-11, 586-587-11, 588-589-11, 590-591-11, 592-593-11, 594-595-11, 596-597-11, 598-599-11, 600-601-11, 602-603-11, 604-605-11, 606-607-11, 608-609-11, 610-611-11, 612-613-11, 614-615-11, 616-617-11, 618-619-11, 620-621-11, 622-623-11, 624-625-11, 626-627-11, 628-629-11, 630-631-11, 632-633-11, 634-635-11, 636-637-11, 638-639-11, 640-641-11, 642-643-11, 644-645-11, 646-647-11, 648-649-11, 650-651-11, 652-653-11, 654-655-11, 656-657-11, 658-659-11, 660-661-11, 662-663-11, 664-665-11, 666-667-11, 668-669-11, 670-671-11, 672-673-11, 674-675-11, 676-677-11, 678-679-11, 680-681-11, 682-683-11, 684-685-11, 686-687-11, 688-689-11, 690-691-11, 692-693-11, 694-695-11, 696-697-11, 698-699-11, 700-701-11, 702-703-

ALL MACHINED SURFACE FINISHES  
TO BE:   $1.6 \mu\text{m Ra}$  (63  $\mu\text{in CLA}$ )  
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UNSPECIFIED TOLERANCE:  
X = ± 1 mm.  
X = ± 0.2 mm.  
XX = ± 0.10 mm.

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**DANDO DRILLING INTERNATIONAL LTD**

## Key Features & Options

- Hydraulic piston and gear motor options available
- A choice of different ratio's to suit your drilling requirements
- Can be easily mounted on-board drilling vessels and onshore rigs.
- Robust twin wormshaft and single gear wheel arrangement.
- Simple to maintain
- 40 Ton loading capacity
- Technical support available to advise of the correct hydraulic system suitable for the speed and torque needed.

## General Specifications

Estimated Weight: 630kg

Gear Oil: 18 litres EP Gear Oil Grade 80/90

Hydraulic Oil: Shell Tellus 46 or equivalent

Maximum Pullback: 40 tons.

Estimated Shipping Dimensions: 1m x 1m x .8m

Please contact a Dando Drilling representative for further information.

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