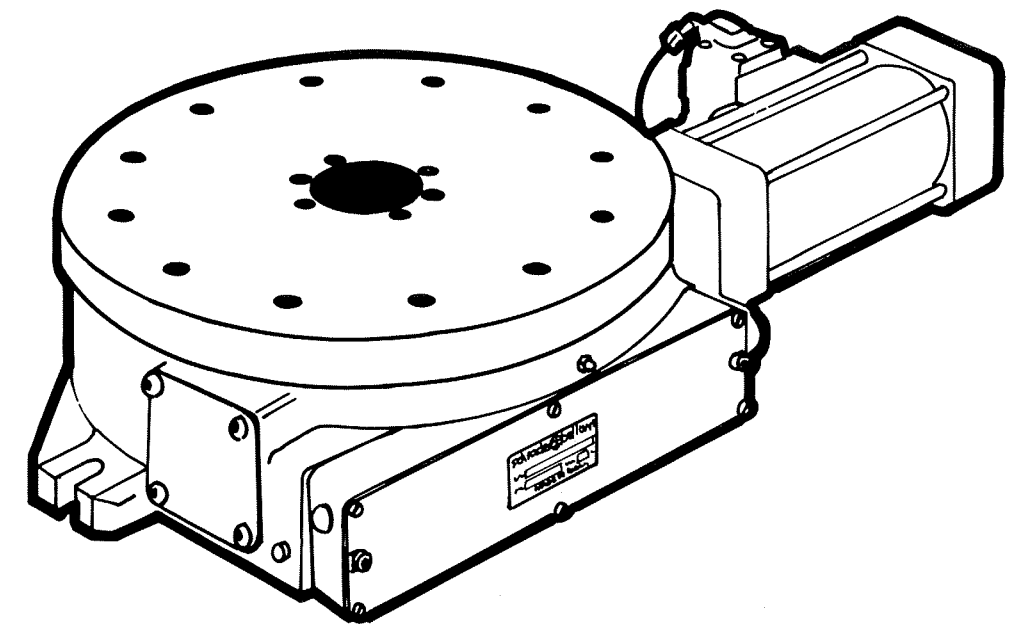


DEVERELL ASSOCIATES
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B 311-9 Series ROTARY FEED TABLE



Distributed by:

Schrader Bellows Limited

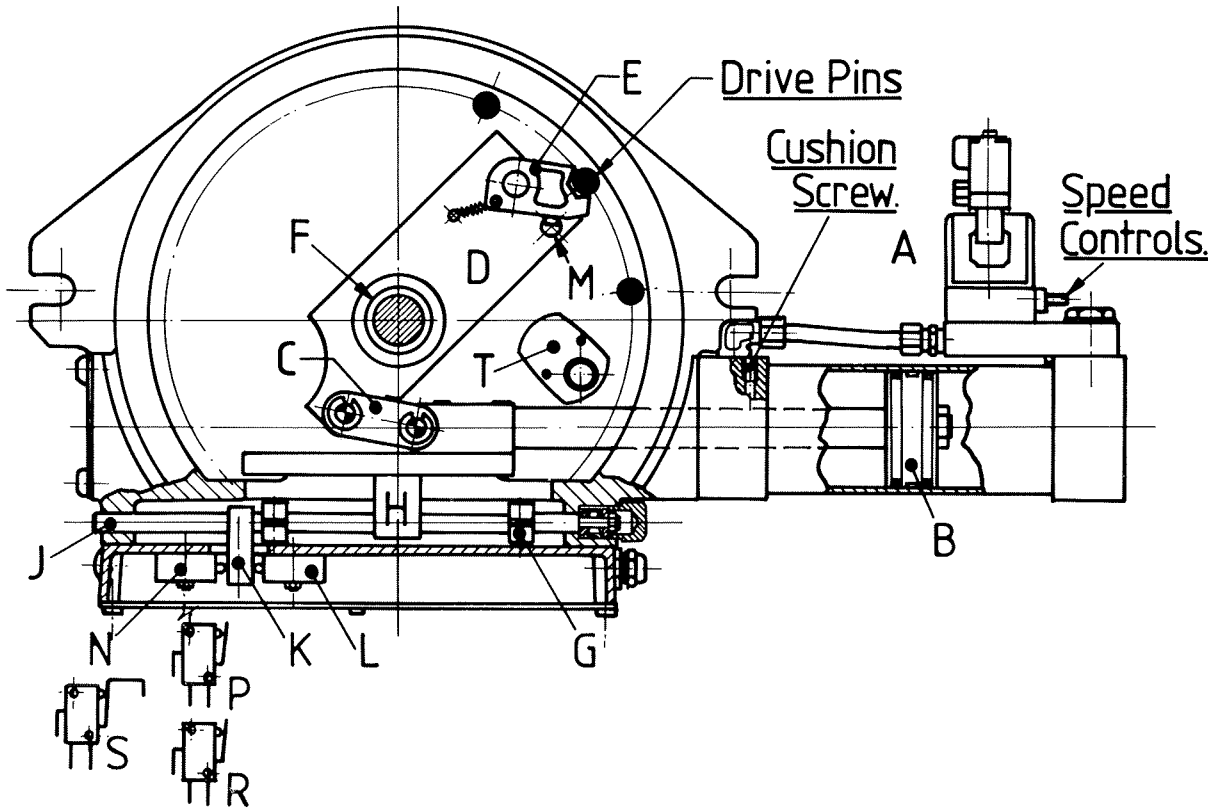
Scovill

Walkmill Lane, Bridgtown, Cannock, Staffs., WS11 3LR.
Telephone Cannock 2644, Telex 336150 SCHRAD G

- 300mm TABLE TOP
- RUGGED CONSTRUCTION
- ANTI-CLOCKWISE VERSIONS
- OIL CONTROL OPTIONS
- ADJUSTABLE STATIONS

February 1983

SEQUENCE OF OPERATION



This diagram illustrates the working parts and control mechanism of the B311-9 Series of Units, circuits are shown opposite.

Basic Cycle

Valve A directs air to withdraw piston B, rotating plate D and pawl E until travelling block H strikes trip block G, positioned for the required number of stations, actuating valve L through block K.

Valve L then reverses A and piston B, pushing links C to rotate D, engaging pawl E with the next drive pin under the table top and stopping locked against block T.

Spring loaded pin M holds pawl in engagement with drive pins during rotation and allows free movement of pawl whilst re-setting, roller clutch at F prevents table from backing off.

Control Signals (Pneumatic)

Mains air is connected to the centre port of valve A. The signal port is given a short positive pulse to retract piston B until valve L is actuated to reverse A and B. At end of cycle, K actuates valve N to signal "movement completed" to associated equipment. This is a maintained signal.

Control Signals (Electro Pneumatic)

Initiation is by electrical pulse to the solenoid of valve A. At end of cycle, K actuates switches P and R. R is a safety interlock with valve A, and P is available for a maintained output signal; on models B311-913X this is converted to a pulse by timer Switch S.

P.L.C. Electro Pneumatic models have an additional switch actuated with valve L for monitoring retract response when used with Schrader Bellows Programmed Logic Controls.

DESCRIPTION

This completely new design of Schrader Bellows 300mm Rotary Feed Table will automatically position parts accurately, rapidly and with a smooth, easy motion.

Standard units are readily adjustable to 4, 6 or 12 stations; any stations from 4 to 32 can be supplied to specific order.

Available clockwise or anti-clockwise; can be converted with simple tools if required. Normal maximum load, 100Kg on sub-tables up to 500mm diameter or 150Kg if oil decelerator is added, see page 5 for speed-load guidance.

DESIGN FEATURES

- * Substantial taper roller centre bearing — also provides precise register via table top to sub-table.
- * Hardened and ground drive pins to jig bored table top on 240mm pitch circle.
- * Extra heavy duty pivots, links and pawls with large back-up surfaces.
- * Linkage geometry promotes table deceleration and increased power into locked station position.
- * Bolt-on kits for oil decelerator to control heavy loads; or Hydro-Check for smooth rotation in presence of local resistance such as radial machining or actuation of cams.

CONTROL SIGNALS

All tables are complete with air or electrically actuated main control valves and provide air or electric output signals at end of cycle.

All models for electric controls have a circuit interlock to inhibit a "start" signal unless table is locked in station.

On "Pulse" models the maintained "end of cycle" signal is converted to a pulse when the table locks into station, see "Circuits", page 7.

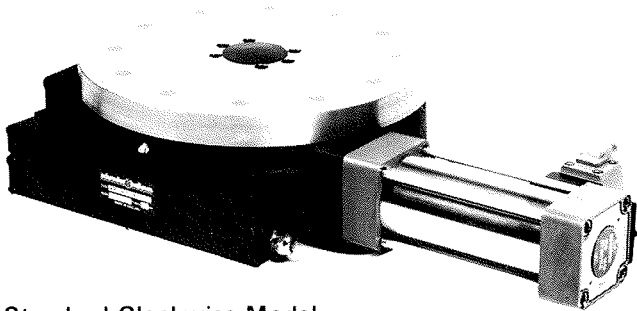
The "PLC" version has an additional micro-switch to monitor the piston rod position when used with a Programmed Logic Control.

TECHNICAL DATA

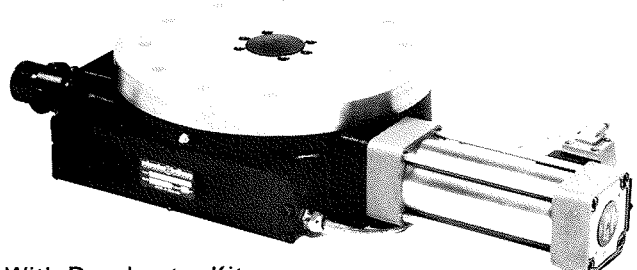
Table top diameter	300mm
Centre register dia.	52.015
	51.990
Maximum load — standard	100kg
— with decelerator	150Kg
*Normal process load — downwards	1000Kg
*Radial process load — at surface	1000Kg
†Tangential load — 150mm Radius	250Kg
Air line pressure — min	3.0 bar
— max	7.0 bar
Normal working, constant	5.5 bar
Weight, standard unit	39Kg
Add for Hydro-check	3kg
Add for decelerator	2Kg

*With table in locked position

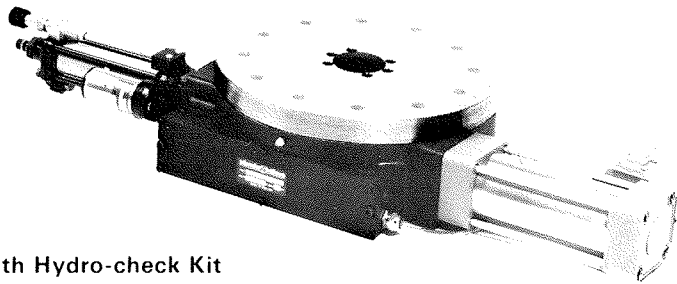
†In direction of rotation only



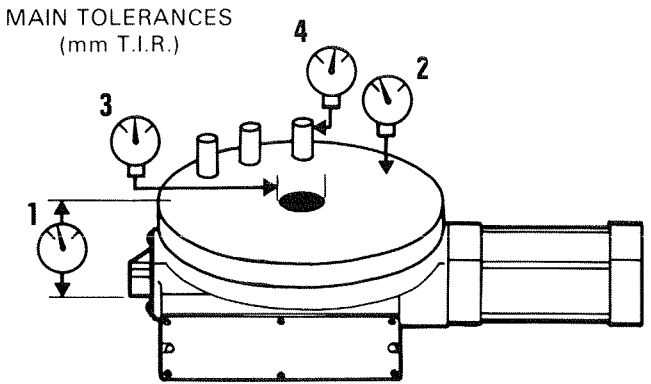
Standard Clockwise Model



With Decelerator Kit

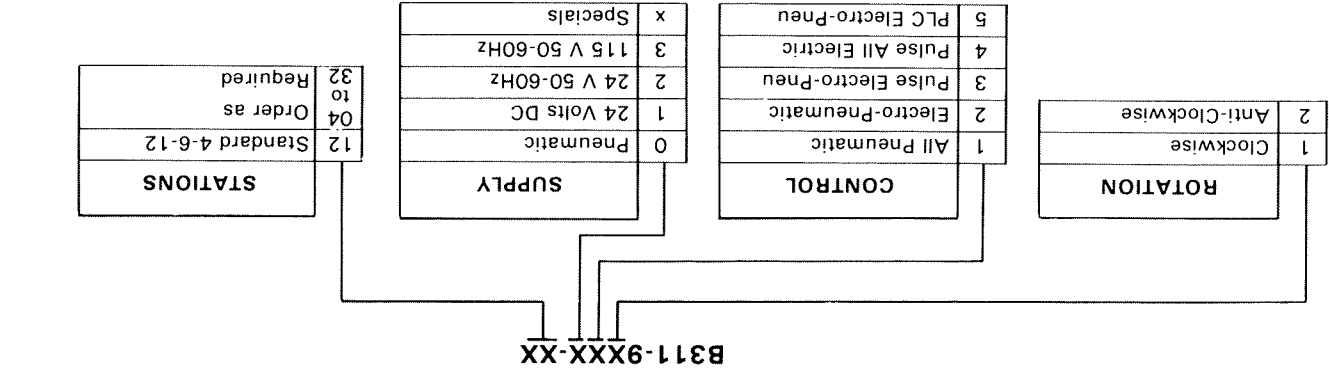


With Hydro-check Kit



1.	Parallelism	0.070
2.	Vertical run-out	0.050
3.	Horizontal run-out	0.025
4a.	Station repeat	0.035 (1 min of arc)
b.	Between stations at 240mm dia.	0.070 (2 min of arc)

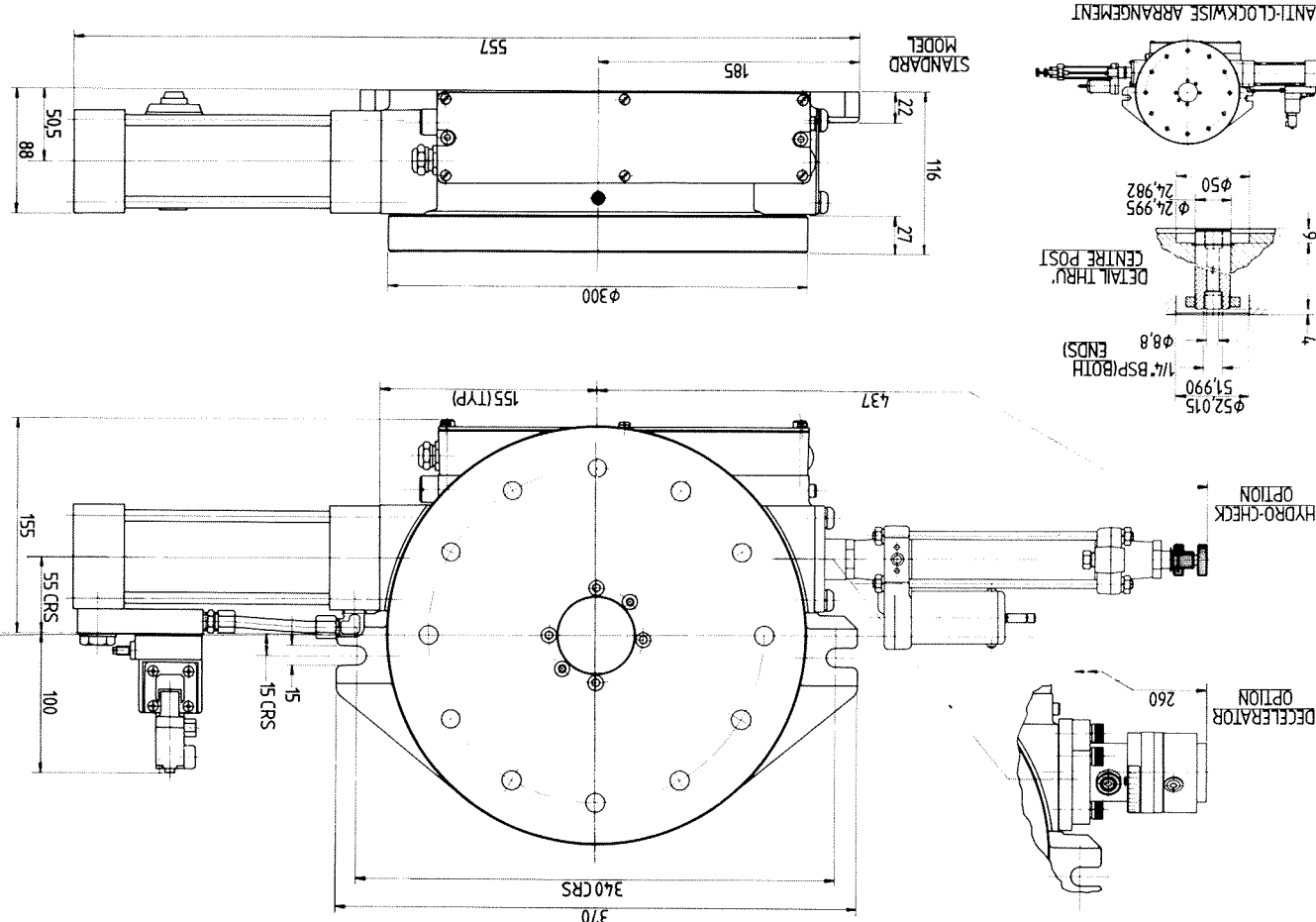
HOW TO ORDER



Use the above coding to order your selected Rotary Table, together with accessories and service spares from the list below:-

- B1801-2406 Hydro-check and Mounting Kit complete.
- B712-504 Oil Decelerator and Mounting Kit complete.
- B732-539 Service kit for cylinder and main valve.
- B732-504 Service kit for Hydro-check.
- H154-511 Spare Micro-switch (page 6, items P & R)
- H154-506 Spare Timer Switch (page 6, item S)
- M43303C Spare Pilot Valve (page 6, item L & M)

DIMENSIONS



SPEED-LOAD CAPACITY

The B311-9 Rotary Feed Table is designed to move its combined load of added table top, jigs and components smoothly and safely from station to station. The time needed for this is directly related to the angle of rotation (number of stations), the total weight of the load and diameter of the table top. As these increase, the driving speed of the air cylinder is reduced by adjusting the main valve speed controls (see page 6).

The following graphs are presented as a practical guide to realistic operation and the speeds and loads indicated should not be exceeded. As a typical example, the weights of total jigs and components are assumed to equal the weight of the added table top and distributed in a ring as shown in Fig. 1.

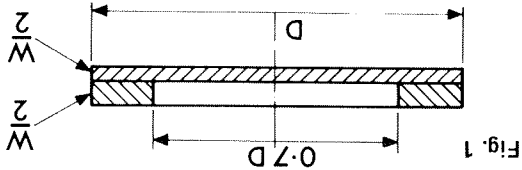


Fig. 2 shows desired minimum times (max. speeds) for added loads, from zero to 100 kilos, on sub-tables up to 500mm dia., air pressure 5.5 bars (80 psig).

Fig. 3 shows the minimum permissible times when using a hydraulic decelerator kit B712-504, accommodating loads up to 150kgs. Note that this facility should be used with 4, 6 or 8 stations only.

Seconds to reposition

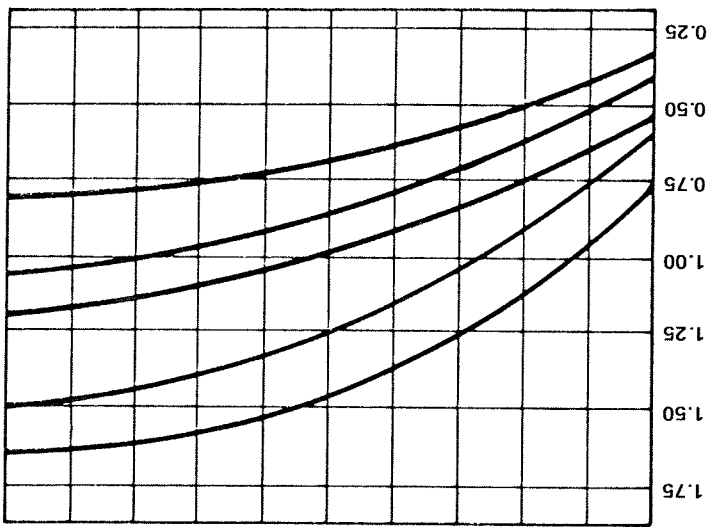


Fig. 2

Kilos — additional to standard table top

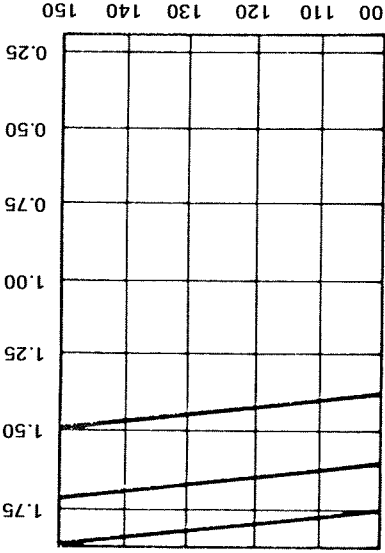


Fig. 3

Fig. 4 indicates how the maximum combined weights must be reduced when using larger table tops, up to 1.3 metres dia. The lower curve is for standard air cushioned tables and the higher for those fitted with oil deceleration kit B712-504.

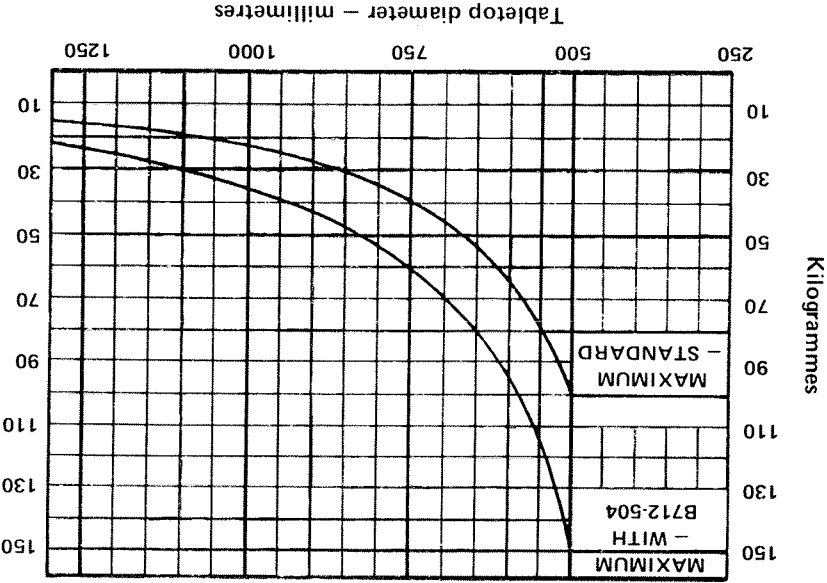


Fig. 4