



HYTEC
SOUTH AFRICA
 (RF) (Pty) Ltd

Reg. No.: 1970/013636/07

rexroth
 A Bosch Company

A Bosch Rexroth Company

Company : VEST Inc
Attention : Mark Massey
Re : MDTools Manifold Desgn
Date : 13 September 2021

HYDRAULICS & AUTOMATION

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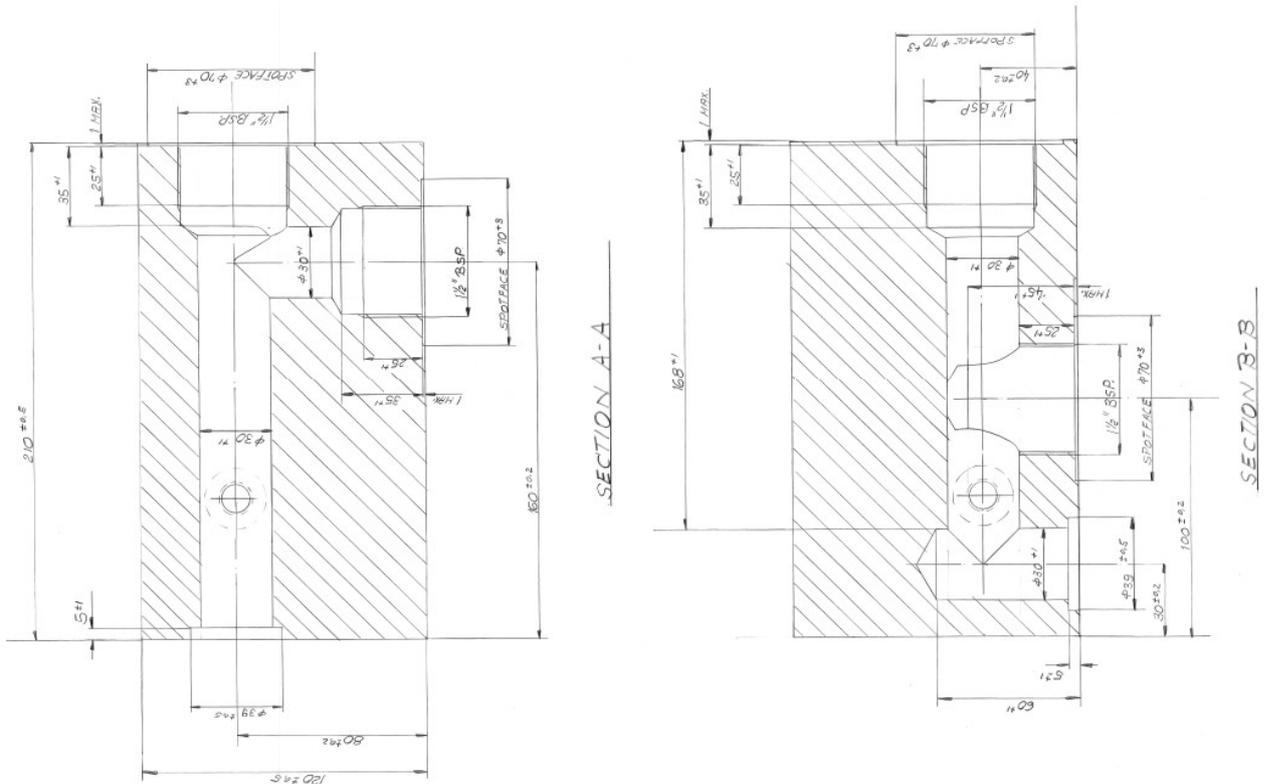
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Testimonial - Hytec Drawing Office – MDTools Manifold Desgn

Good Afternoon Mark

As per our Telephone discussion I want to supply you with a testimonial to the use of MDTools as Follows :

- Hytec were from as early as 1975 designing manifolds in hand drawn 2D drawing board style and add notes to specify cavities and hole details.

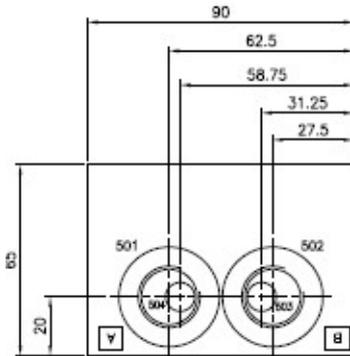


Branches in: Cape Town, Durban, Johannesburg, Klerksdorp, Kuruman, Mogalakwena, Newcastle, Polokwane, Port Elizabeth, Pretoria, Richards Bay, Rustenburg, Saldanha Bay, Secunda, Steelpoort, Vanderbijlpark, Witbank.
 Operations in: Botswana, Ghana, Kenya, Mozambique, Namibia, Zambia

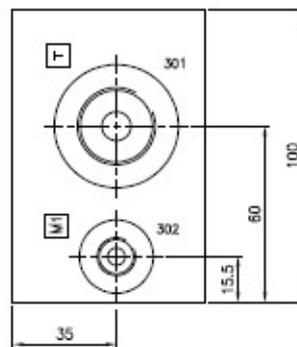
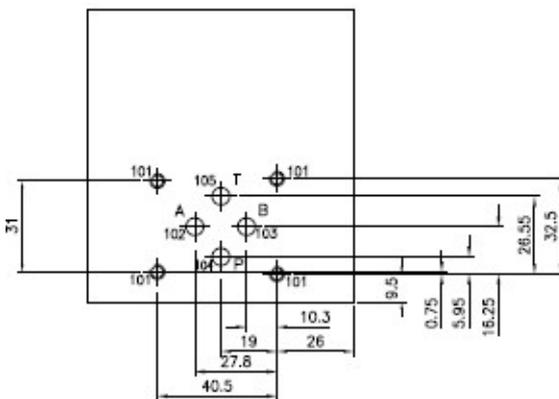
Directors: T. Olsen*, M.J. Harrison, M.S. Dondolo (Chairman), J. Sookdeo, A.R. Castle**, N.V. Mfono
 F.S. Kuhn (Alt), I. Du Toit (Alt), K.P. Marggraff* (Alt).
 * German ** British



- In 1994 and onwards we were already drawing on Autocad 2D typing out the drilling table to suit the design. This drilling table method were very tedious and time consuming. Then we build a 3D Card box model and color the drillings in to visualize the manifold and so minimize mistakes and rework.



HOLE	Ø	DEPTH	APPLICATION	REMARKS	INTERSEC.
101	M6	10	NG6 MOUNTING HOLES	PILOT 15 DEEP	
102	6	25	NG6 (A-PORT)		504
103	6	25	NG6 (B-PORT)		503
104	6	38	NG6 (P-PORT)		401
105	6	38	NG6 (T-PORT)		401
201	DETAIL C		P - PORT (R1/2" BSP)		202
202	6	48			104,302,201
203	M8	16	MANIFOLD MOUNTING HOLES	PILOT 20 DEEP	
301	DETAIL D		T - PORT (R3/4" BSP)	PILOT #10x48 DEEP	401
302	DETAIL B		M1-TEST POINT (R1/4" BSP)	PILOT #6 x 48 DEEP	104,201,401
401	DETAIL A		CP208-1	PILOT #6x55 DEEP	104,105,202,301,302
501	DETAIL C		A - PORT (R1/2" BSP)		504
502	DETAIL C		B - PORT (R1/2" BSP)		503
503	10	77			103
504	10	77			102



- We soon realized that with our manifold design style in Autodesk Inventor in 3D that it was even better that what we did prior to 2005 designing in 2D then build a 3D Card box model to visualize.
- We then developed the cavities and insert it into the 3D model as features and visualizing the Model were now really getting much easier. We were however still being typing out the drilling table in a spreadsheet format and then inserted it into the Model drawing.
- We stated using MDTTools in 2009 as an Evaluation Option. At first it was new and cavities from the MDTTools Library had to be checked again to ensure the detail matches the Hytec Specification and then add the correct text when the Drilling list are inserted it is displayed correctly. MDTTools is very versatile to cavity manipulation and customisation.

From here on it kept on going better as I started developing our own special patterns and Cavities in our industry and what we tend to use frequently.

The MDTTools add on software for Autodesk Inventor is really helped us a lot when the Automated Drilling Table are created in merely inserted and it is done. So from creating Manually thyped drilling table from small to multiple drillings that could take up to 2 days to do now only take seconds and it is placed on the drawing.

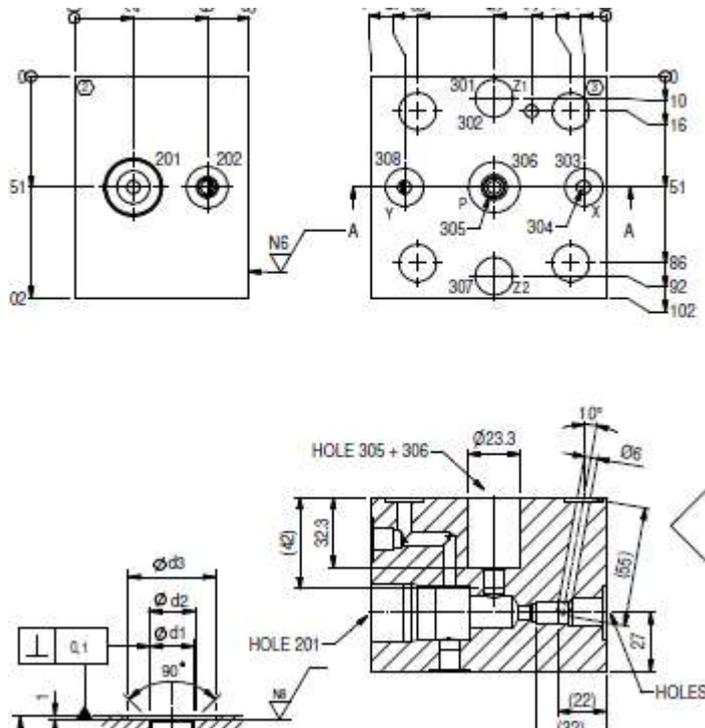
If a design change occurs it is as easy as inserting the changed cavities or new, auto renumber in 3D model correctly with the MDTools cavities and insert the new drilling table – NO MORE TYPING.

In the years following Hytec has trained all the Drawing Office staff to Utilize the Software to its full potential as easy to use add on software.

Since the inception of the purchased MDTools software Hytec has done more or less 780 new manifolds on MDtools are we are putting out manifolds much faster than before with the function to check the wall thickness and interferences with more accuracy than the previous manual methods and get to a final produce that works much faster.

We are in some occasions using the software to add some automation on flange type applications with drillings i.e Threaded ports, SAE , BS4504 flanges miscellaneous holes, filter mounts and other features to enable the manipulating much faster.

See below a sample of a special cavity :



I would recommend the software to anyone that will be designing manifolds and similar products.

Assuring you of our best attention at all times
Yours faithfully

HYTEC SOUTH AFRICA (RF) (PTY) Ltd
A Bosch Rexroth Company

Geoff Smith
Group Drawing Office Manager
Email: Geoff.smith@boschrexroth.co.za