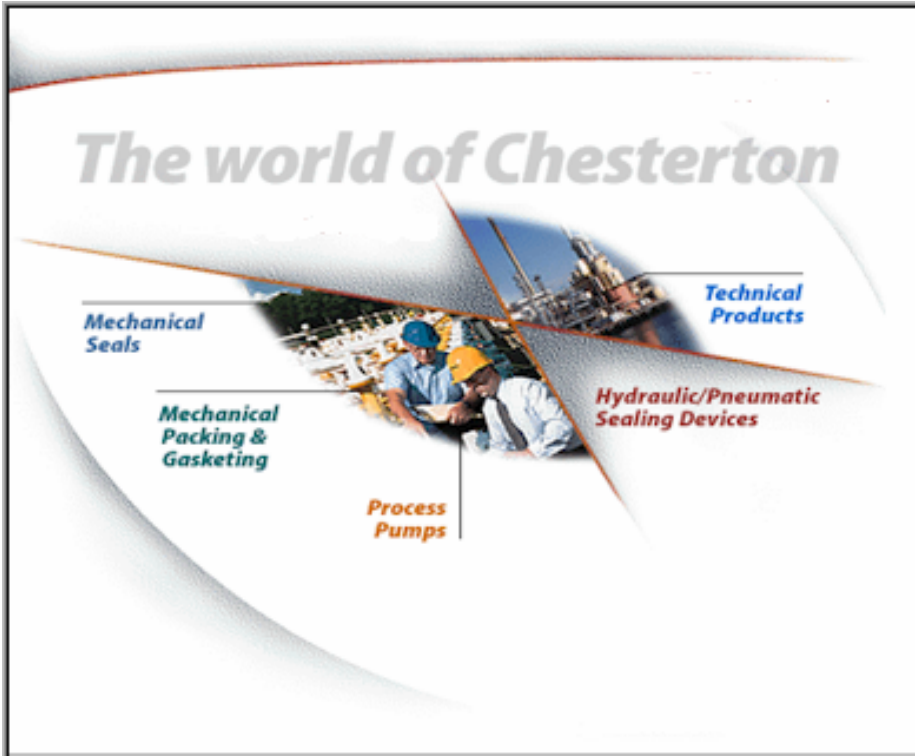


# AW Chesterton Mechanical Packing Division



Gary McCoy &  
Ron Frisard  
AOV 2002 meeting





 **Valve Wizard** 

Version 1.008

Copyright 2000 A.W. Chesterton Co

All Rights Reserved.



# What is it ?

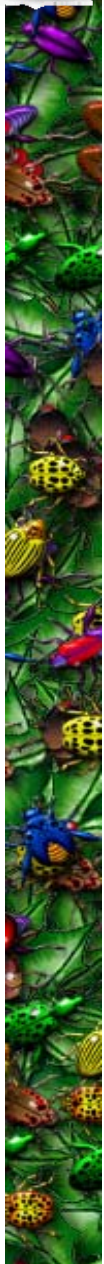


# Valve Management System

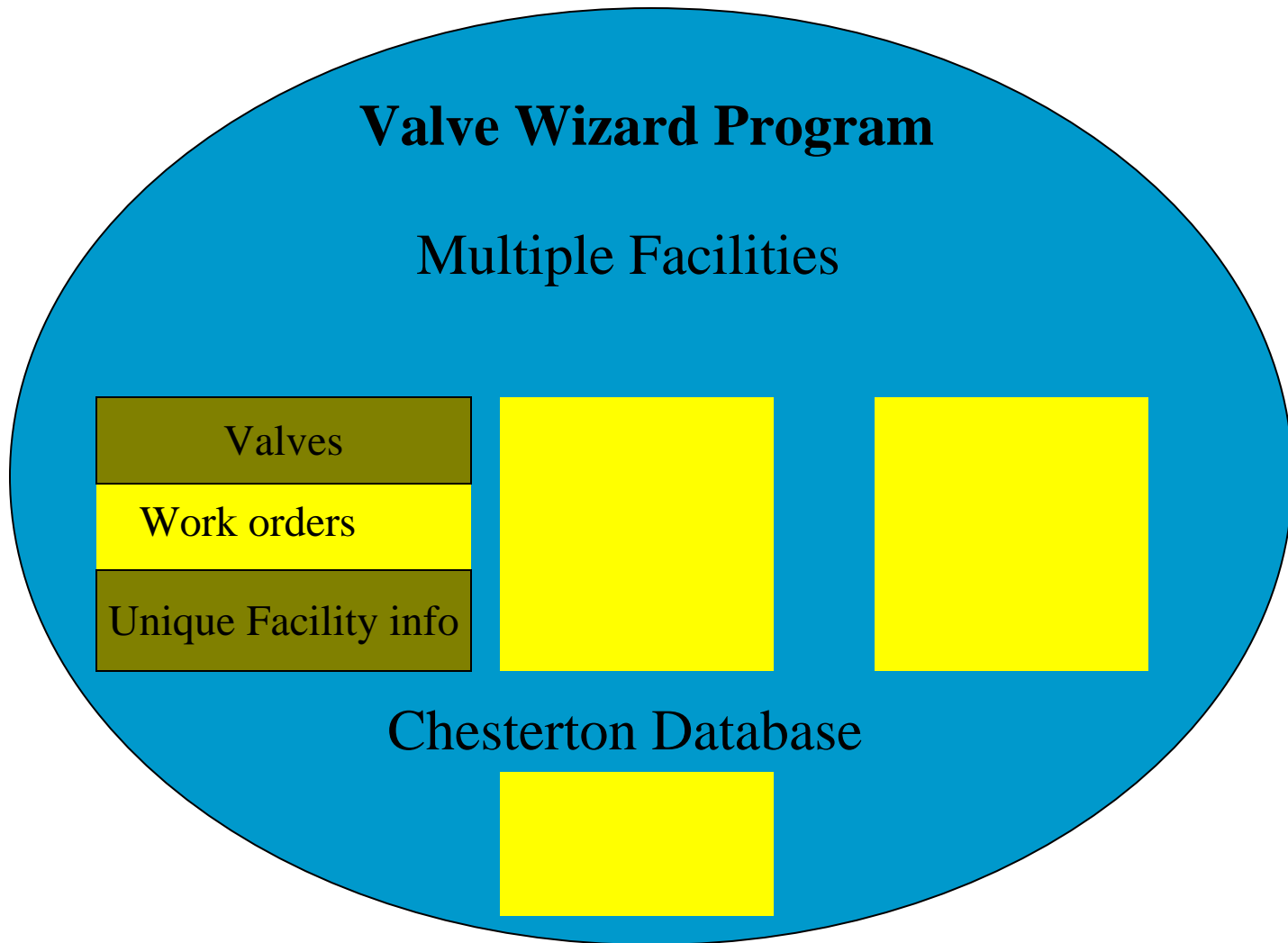
What is it ?

- it is a system to get a handle on your entire valve population
  - Valve info (type, size, Etc)
  - Valve Dimensions (Packing Size, Stud diameter, Etc)
  - Information Relevant to the plant (Location, Safety area, Etc)
  - Reliability Information ( MTBF, Etc)





# Valve Wizard Structure





# Unique Facility Info

- Matching Chesterton Item Numbers with the Plants
- Minimum Gland Loads
- Safety Factors
- Maximum torque Factor

Valves

Work orders

Unique Facility info

System Information

Actuation | Plant Information

Actuation Data

ShortDesc	LongDesc	MinGlandLoad	Safety Factor
MOV	Motor Operated Valve	1400	1.75
MAN	Manual Operated Valve	1400	1.75
AOV	Air Operated Valve	1400	1.75
CON	Conval	1400	5

Close



# Security

- Multi-Level Security
  - Admin or User
    - Admin has rights to the following:
      - Setup users
      - Actuation Plant Info
      - Restore deleted Item Numbers
      - Map Item Numbers
      - Reset “locks”
      - Set Page size and grid default
  - Insert
    - Add New valves to the Faculty
  - Update
    - Only Update valves
  - Delete
    - Have rights to delete a valve
  - Combination
    - Can have a combination of all three
  - Just Print
    - If none checked only allow user to print sheets





# Main Table

Valve Summary View - Current EIN is [1009]

View all Valves    Reset Layout    Print Data    Enter a Partial or complete EIN to search    Go

EIN	Manufac	Model	Valve_St	Stuffing_	Gland_St	Gland_St	Recomm	Product	Actuatio	Sys_Pres	LastChangedBy
10006	Arco	44	0.75	1.5	0.5	2	11.591	5300/1-CI	MAN	1200	SUSAN
10004	Crane	T2g	2	0.5	2	0		1600	MAN	150	KELLY
1009	Crane	T2p						1600	MAN	150	RICH
10001	Crane	T2						1600	MAN	150	RUDY
10003	Fisher	EZ						5300/1-CI	ADV	1000	RUDY
10007	Crane	t1						5300/1-CI	MOV	100	SUSAN
10008	Igi louga va	hh						5800	MAN	1200	KELLY
10005	Valtek							5800	ADV	600	RUDY
▶ 10002	Wocester	K2	0.748	1.5	0.375	2	6.535	5300/1-CI	MAN	875	SUSAN

Clicking on these headers  
Will sort this page by  
that field

EIN    Manufac    Model    Valve\_St    Stuffing\_    Gland\_St    Gland\_St    Recomm    Product    Actuatio    Sys\_Pres    LastChangedBy


Page 1 of 1    Exit



# Preformed Rings

- Preformed rings are specifically developed to create a specific density inside the stuffing box. They are made to specific ID and OD sizes. This allows Chesterton to calculate an exact load that is needed to create a seal. Also, Chesterton can calculate an estimated stem friction for these products.



 Valve Packing Wizard

Please pick a product Family:

Product Family

Product Name

- Style 5800
- Style 5300/ Style 1-CI
- Style 5300/ Style 5600
- Style 5300/ Style 1600
- Style 5300/ Style 1601
- Style 5800/ Style 477-1
- Style 5800/ Style 1900



# How to Data Enter a Preformed Ring Valve?

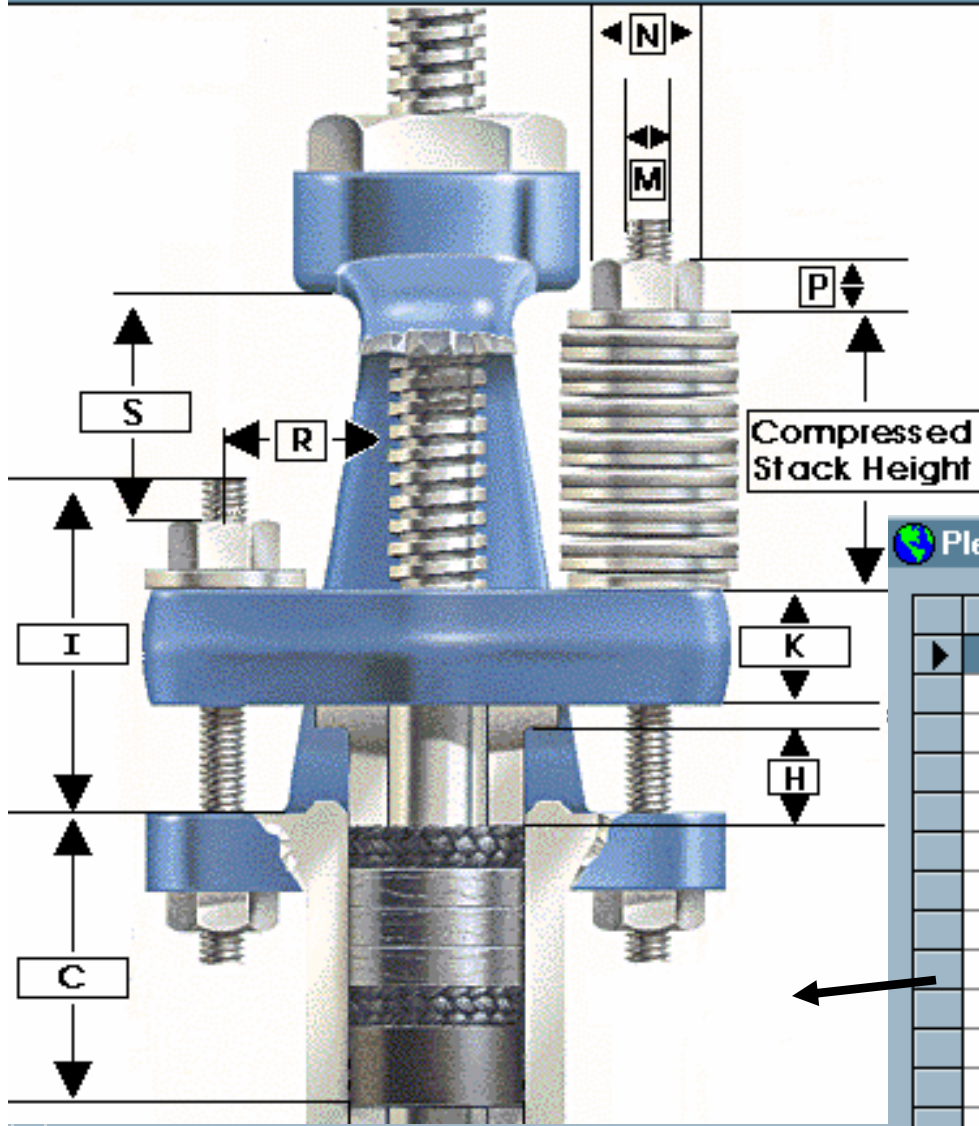
Valve Packing Wizard

Required Input : - Optional Input :

EIN : <input type="text" value="a0115"/>	Priority : <input type="text"/>	System No : <input type="text"/>	Tapered Box : <input type="text"/>
Lantern Ring : <input type="checkbox"/> (No)	Mfgr : <input type="text"/>	Model : <input type="text"/>	
System Pressure : <input type="text" value="1000"/> PSI	Size : <input type="text"/>	Type : <input type="text"/>	
System Temperature : <input type="text" value="300"/> degrees F	Safety Class : <input type="text"/>	Containment : <input type="text"/>	
Actuation : <input type="text" value="ADV"/>	Proced No : <input type="text"/>	Drawing No : <input type="text"/>	
Certification : <input type="text" value="Certifiable"/>	Sys Area : <input type="text"/>	Sys Function : <input type="text"/>	
Live Loaded <input type="text" value="General"/>	Comment : <input type="text"/>		
Unit : <input type="text" value="1"/>			

Page -2-

re Cutaway View...



Want ...

RingID	5300 Height	5300 CS
2	0.5	0.5

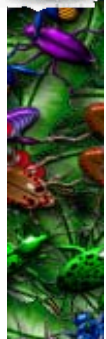
AW Chesterton  
that is based on a  
it with a total  
015" for each side

Please select the Sealing ring you want ...

5300 ItemNo	5300 RingID	5300 RingOD	5300 Height	5300 CS
010778	1	1.235	0.117	0.117
010432	1	1.25	0.25	0.125
011220	1	1.312	0.156	0.155
010200	1	1.375	0.187	0.187
010723	1	1.4	0.187	0.2
011920	1	1.437	0.218	0.218
010837	1	1.478	0.239	0.239
010201	1	1.5	0.25	0.25
010708	1	1.529	0.25	0.264
011655	1	1.539	0.25	0.269
010884	1	1.545	0.272	0.272
010607	1	1.562	0.25	0.281
010760	1	1.562	0.281	0.281
010203	1	1.625	0.312	0.312
010202	1	1.625	0.25	0.312
011337	1	1.656	0.328	0.328
010939	1	1.687	0.343	0.343

<< Prev

Next >>



Notice ...

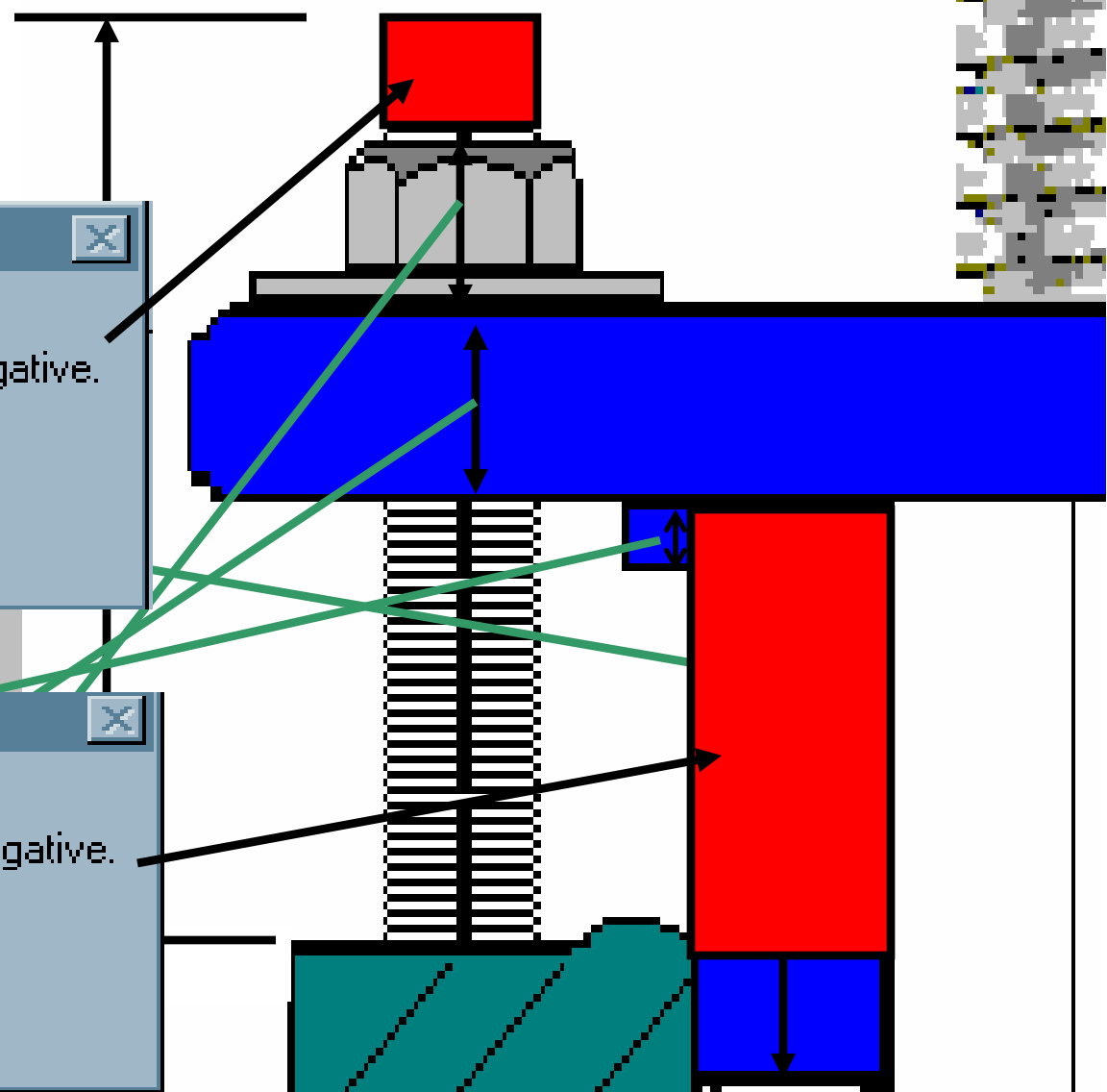
**i** Your Thread Engagement is negative.

OK

Notice ...

**i** Your Remaining Follower is negative.

OK





# Valve Packing Wizard

## Output

ProductName - Style 5300/ Style 1-CI All values are in English units.

System Pressure	1000 psia
System Temperature	
Live Loaded	
Lantern Ring Present	
Stud Quantity	
Sealing Ring	
Sealing Ring Count	
Sealing Ring Item No	
Sealing Ring MS Item No	
Certification	Certified
Actual Stuffing Box Bore ID	1.500 inches
Selected Stuffing Box Bore ID	1.500 inches
Actual Valve Stem OD	1.000 inches

### Success !!!



The Valve Add operation has succeeded.

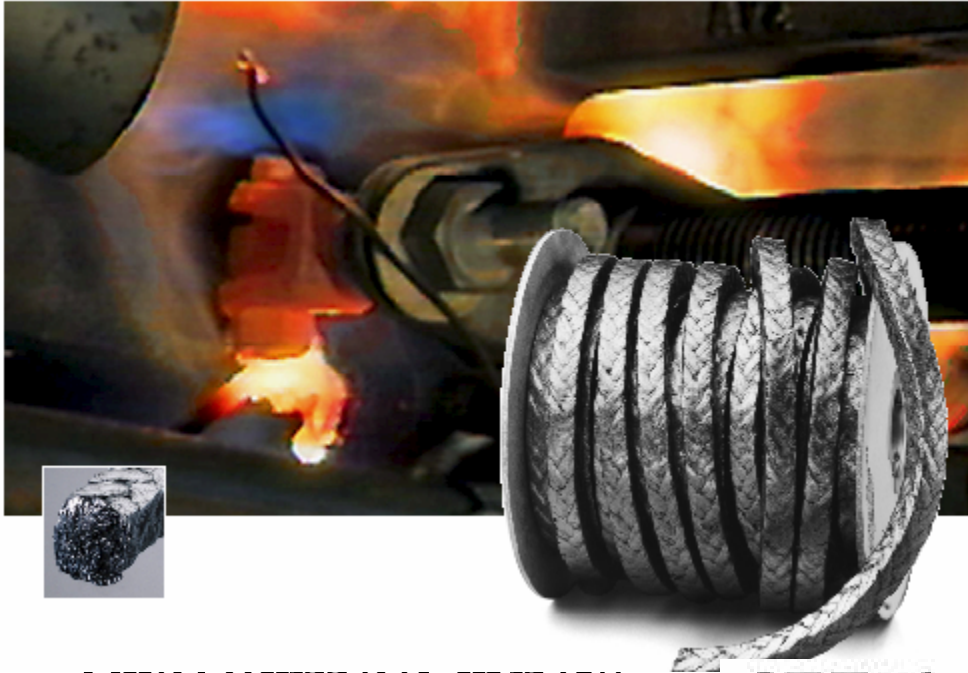
OK

# Save to EIN...

Close



1600/1601

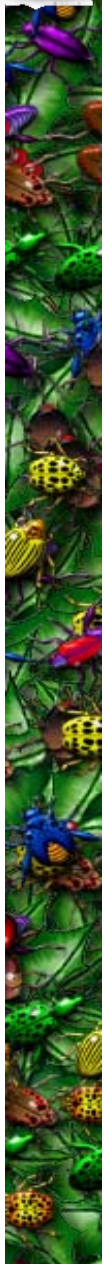


1724/324/1724



1400R

477-1





# How to Data Enter a Spool Ring Valve

**Valve Packing Wizard**

**Specification Data:**

Required Input :

EIN :

Lantern Ring :  (No)

System Pressure :  PSI

System Temperature :  degrees F

Actuation :

**No LiveLoading**

**No Certifiable**

Unit :

Optional Input :

Priority :  System No :  Tapered Box :

Mfgr :

Model :

Size :  Type :

Safety Class :  Containment :

Proced No :  Drawing No :

Sys Area :

System Function :

Comment :

Page -2-

<< Prev    Next >>    Close





# Valve Packing Wizard

## Dimensional Data

Required Input :

	Actual	Selected	Clearance
A: Stuffing Box Bore ID :	<input type="text"/>	<input type="text"/>	<input type="text"/>
B: Valve Stem OD :	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Combined :	<input type="text"/>
C: Stuffing Box Depth :	<input type="text"/>	<input type="button" value="Packing ..."/>	

M: Gland Stud Diameter :  "

O: Gland Stud Quantity :  "

Page -3-

<< Prev

Next >>

Diagram..

Close

## Select Spool configuration ...

Cut-Ring

Box

Please select the spool type to use :

The Valve Cross Section is : 0.500

The Selected Cross Section is : 0.500

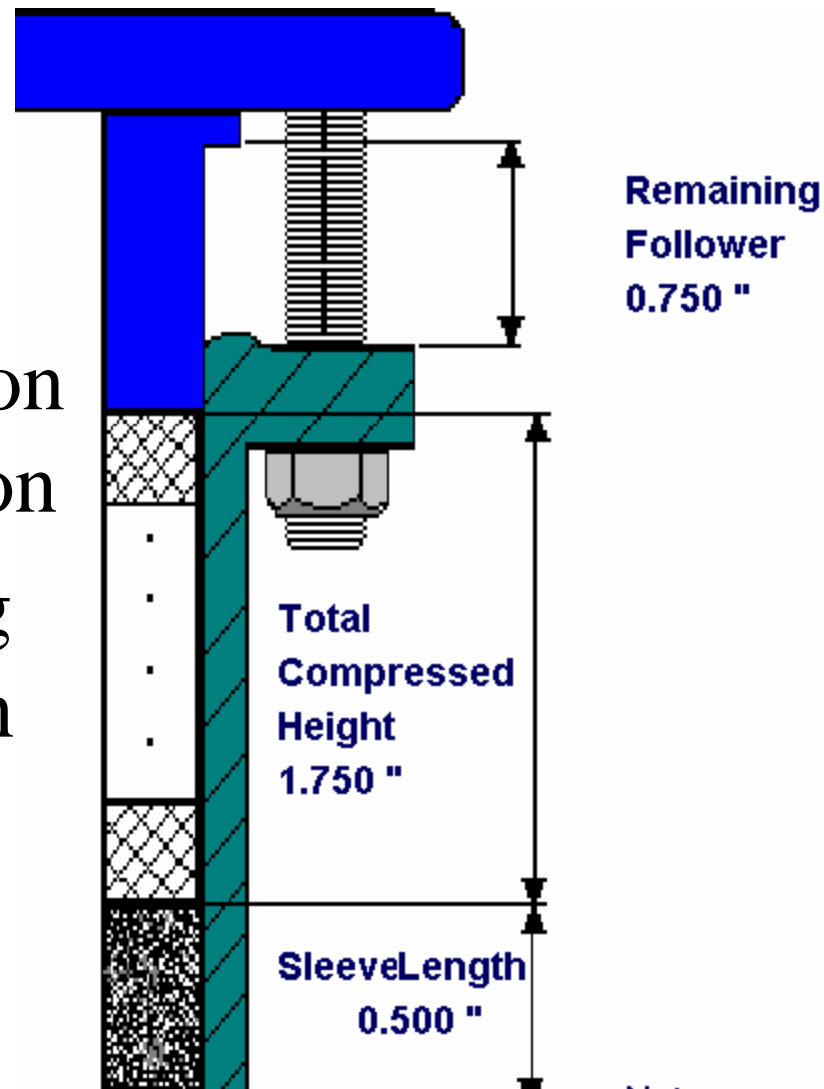
Ok

Cancel



# Bulk Packing Calculations

- No Torque Values
- No Friction data
- Calculation based on Packing Consolation
- Giving a remaining follower dimension



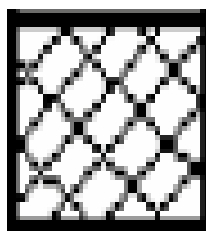


# Non Nominal Sizing of Bulk Packing

- There are times that there is not an exact match from the valve cross section to the packing cross.
- Valve wizard adjusts the height of the rings based on the tolerance between the packing cross section and the valve cross section.



# Non nominal sizing cont.



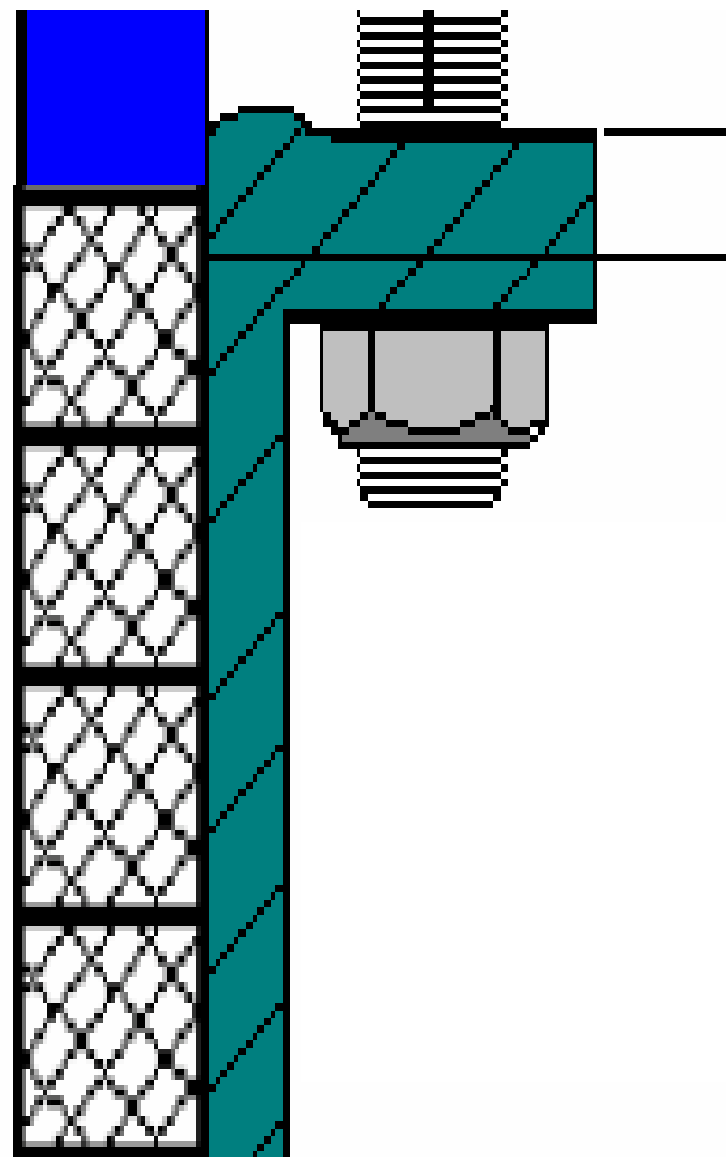
Larger Packing



Nominal Size



Smaller Packing





# Reports

Wilde Wizard

Reports

Administration

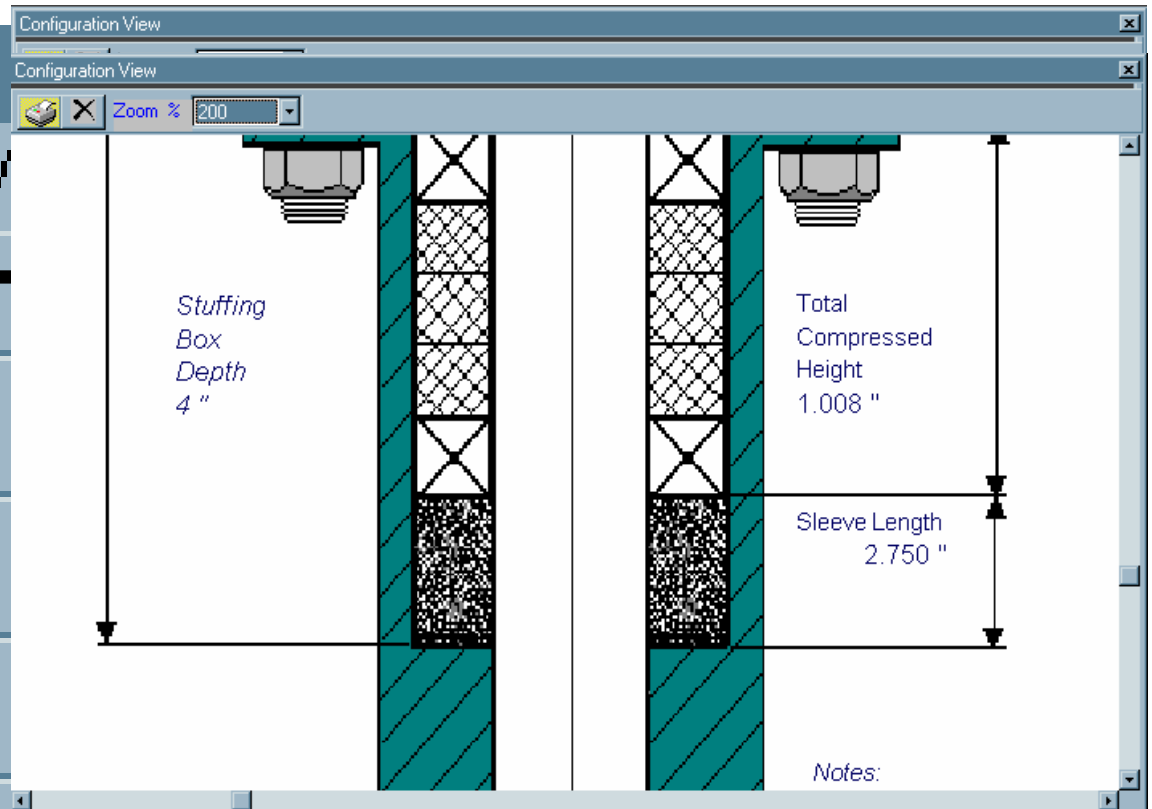
Workbooks

Configuration View ←

Journeyman Worksheet

Field Data Worksheet

Summary Report





# Reports cont.

Wizard

Reports

Configuration

Journey

Field Data

Summary

## Component No. A0115

Manufacturer:	fisher	<u>Box ID</u>	<u>Stem OD</u>
Model:		Actual Sizes: 1.500 "	1.000 "
Size:		Selected Sizes: 1.500 "	1.000 "
Type:		Combined Clearance:	0.000 "
Sys Temp:	300 F	Cross Section:	0.250 "
Sys Pressure:	1000 psig	Gland Stud Diameter:	0.312 "
Actuation:	ADV	Gland Nut Height:	

System Area:

System Function:

## Chesterton Improvement

<u>Description</u>	<u>Item</u>	<u>M&amp;S Number</u>	<u>Quantity Needed</u>
Style 5300	010201	30000X	3
Style 1-GI End Ring	023213	30000X	2
Style 5100 Carbon Sleeve	012040	30000X	1
Style 5150 Spring Assembly	033174 w/InnerGuide	30000X	2



# Report cont.

Field Data

Page 1 Zoom % 100

Unit: 1 **FIELD DATA WORKSHEET**

Component(EIN): A0115

---

Packing Set to Install:	5300/1-CI
Product Certification	Certified:
Lantern Ring Present:	No
Live Loaded Required:	Yes
Priority:	
Box Taper:	0 Degrees
System #:	
Actuation:	A0V
Manufacturer:	fisher
Model:	
Size:	
Type:	
Safety Class:	



# Reports Cont.

Summary Report



Zoom %

200

Page No.

1

EIN	VALVE_STEM_OD	STUFFING_BOX_BORE_ID	GLAND_
TEST 1	0.41	0.75	0.312
TEST 2	0.531	0.875	0.312
VALVE 3	0.531	0.875	0.312
VALVE 4	0.406	0.75	0.312
TEST 5	0.531	0.875	0.312
TEST66	0.531	0.913	0.312
A0115	1	1.5	0.312





### Torque/Friction override

Actuation Type : MAN

Safety Factor : 1.75

	Original Recommendation	Current Configuration
System Pressure Used : <input type="text" value="1377.000"/>	875.000	1377.000
Torque : <input type="text" value="10.000"/>	6.350	10.000
Static Friction : <input type="text" value="797.302"/>	506.551	797.302
Dynamic Friction : <input type="text" value="531.535"/>	337.701	531.535
SafetyFactor : <input type="text" value="1.750"/>	1.750	1.750
Minimum Gland Load : <input type="text" value="1400.000"/>	1400.000	1400.000

Calculations Based on Total Uncompressed Packing Height of < 1.877 >

Reset

Enable All

Re-Calculate

Save Override

Close



# Arrangement Override



	Original Configuration	Current Configuration
End Ring Desc	Style 1-CI	Style 1-CI
End ring Qty	2	2
Sealing Ring Desc:	Style 5300	Style 5300
SealingRing Qty.:	3	3
<b>Sleeve</b>		
Sleeve Length	1.498	1.498
Sleeve Item No	017965	017965
Total Compressed height	1.513	1.513
Total Uncompressed height	1.877	1.877
Remaining Follower	0.511	0.511
Thread Engagement	3.739	3.739
Follower Length	0.875	0.875
Valve Cross Section	0.376	0.376
Box Depth	3.375	3.375
<b>Friction</b>		
Static Friction	506.551	797.302
Dynamic Friction	337.701	531.535

Reset    Enable All    Re-Calculate    Save Override    **Close**



# Mapping Item #

← → Item Number Mapping

Bulk | Pre Formed Rings | Spring Assembly

Pre Formed Rings #:

022025	022039
022026	022040
022027	022041
022028	022042
022029	022043
022030	022044
022031	022045
022032	022046
022033	022047
022034	022048
022035	022049
022036	022050
022037	022051
022038	022052

**PreFormed Ring Item #:** 022029

Assigned MS #:   In Stock

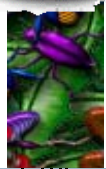
Product:  Certification:

Unit:  Ring ID:

Ring OD:  Height:

Cross Section:  Compression:

Update



# Work orders



Add a WorkOrder ...



Work Orders - For EIN [A0115]



Unit	EIN	Description	Date	Assigned_To	Comments
▶ 1	A0115	Repack Valve	1/11/99		



Add Work Order



Ok

Cancel



# Metric data

**Valve Packing Wizard**

**Dimensional Data**

Required Input :

	Actual	Selected	Clearance		
A : Stuffing Box Bore ID :	<input type="text"/>	mm	<input type="text"/>	<input type="text"/>	mm
B : Valve Stem OD :	<input type="text"/>	mm	<input type="text"/>	<input type="text"/>	mm
	<input type="text"/>	mm	<input type="text"/>	<input type="text"/>	mm

H : Gland Follower Length  mm

I : Effective Stud Length  mm

P : Gland Nut Height  mm

M : Gland Stud Diameter  mm

O : Gland Stud Quantity :

Page -3-

<< Prev    Next >>    Diagram    Close

PV-1305 AMACO					1.25	2	0.75	2	0
PV-1304 BP AMOCO					1.25	2	0.75	2	0
COOPER CAMERON					3.5	5.5	1.75	2	0
▶ METRIC EX					25	50	8	2	0
EIN	Unit	Priority	Manufacturer	Model	Valve_Stem_OD	Stuffing_Box_Bore_ID	Gland_Stud_Dia	Gland_Stud_Qty	Box_Bottom_to_Leakoff



# Exporting Data

## Plant Valve Report



EIN	Last Changed By	Manufacturer	Size	Valve_Stem_OD	Stuffing_Box_Bore_ID	Stuffing_Box_Depth
10006	SUSAN	8/3/00 11:45:21 AM Arco		0.75	1.5	5
10004	KELLY	8/13/99 3:00:32 PM Crane	6"	1	2	6
10001	RUDY	8/3/00 11:06:13 AM Crane	4"	1	2	3
1009	RICH	8/13/99 3:02:01 PM Crane	4"	1	2	3
10003	RUDY	8/3/00 11:38:09 AM Fisher	2"	0.375	0.75	1.25
10007	SUSAN	8/3/99 3:32:20 PM Crane		1.125	1.875	4
10008	KELLY	8/13/99 3:00:19 PM Igi louga valve co		0.75	1.5	5
5800477LR		Igi louga valve co		0.75	1.5	10
10005	RUDY	8/3/00 11:39:12 AM Valtek	2"	0.375	0.625	4
10002	RUDY	8/13/99 7:40:19 PM Wocester	2"	0.748	1.5	3.375

# Questions & Answers



Thank you..