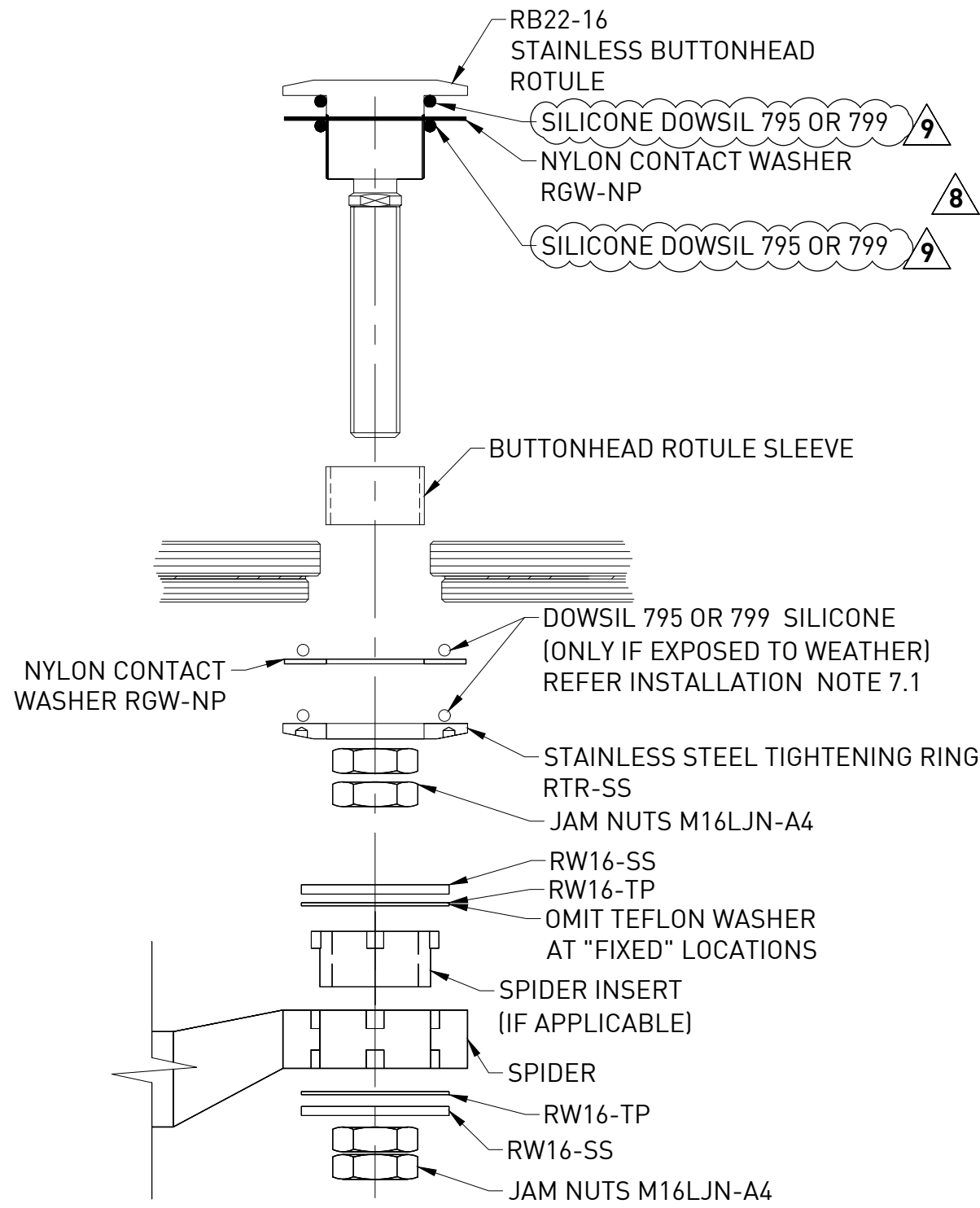




This document has been electronically signed and sealed by Mahmoud Maamouri, PhD, PE, SE on the date shown on the time stamp using a digital signature.

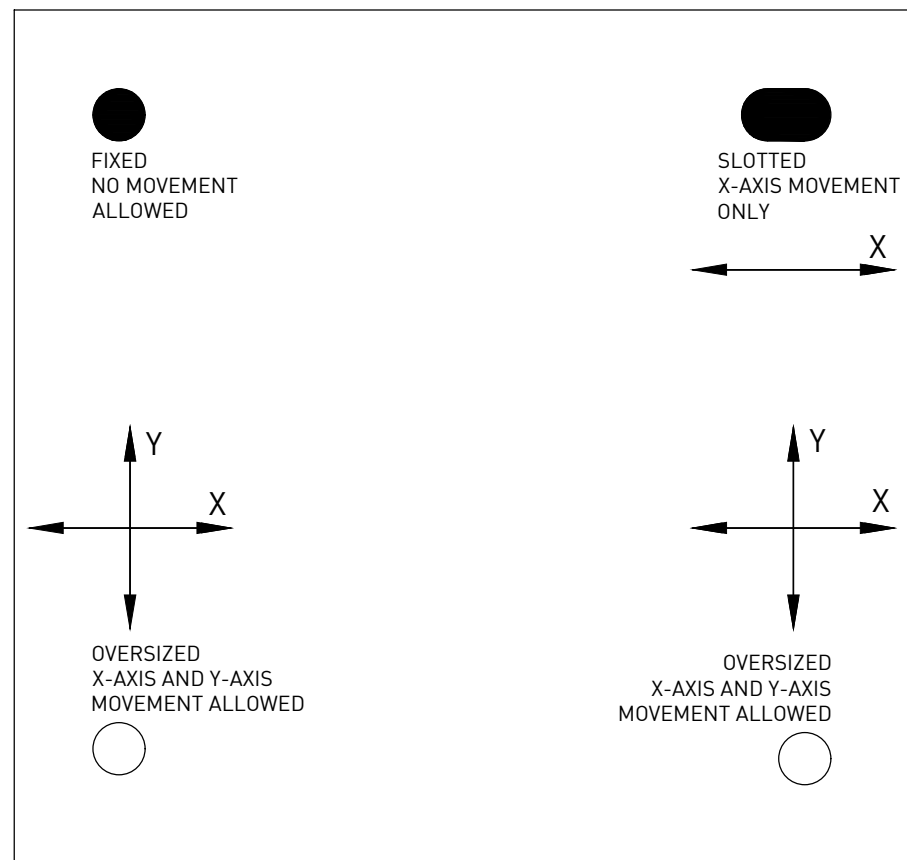
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Mahmoud Maamouri
DN:
E=mmaamouri@csd-eng.com,
CN=Mahmoud Maamouri,
OU=Engineering,
O="Computerized Structural Design, S.C.", L=Milwaukee,
S=Wisconsin, C=US
Location: Milwaukee, WI
Reason: I am approving this document
Date: 2024.07.25
09:59:23-05'00'

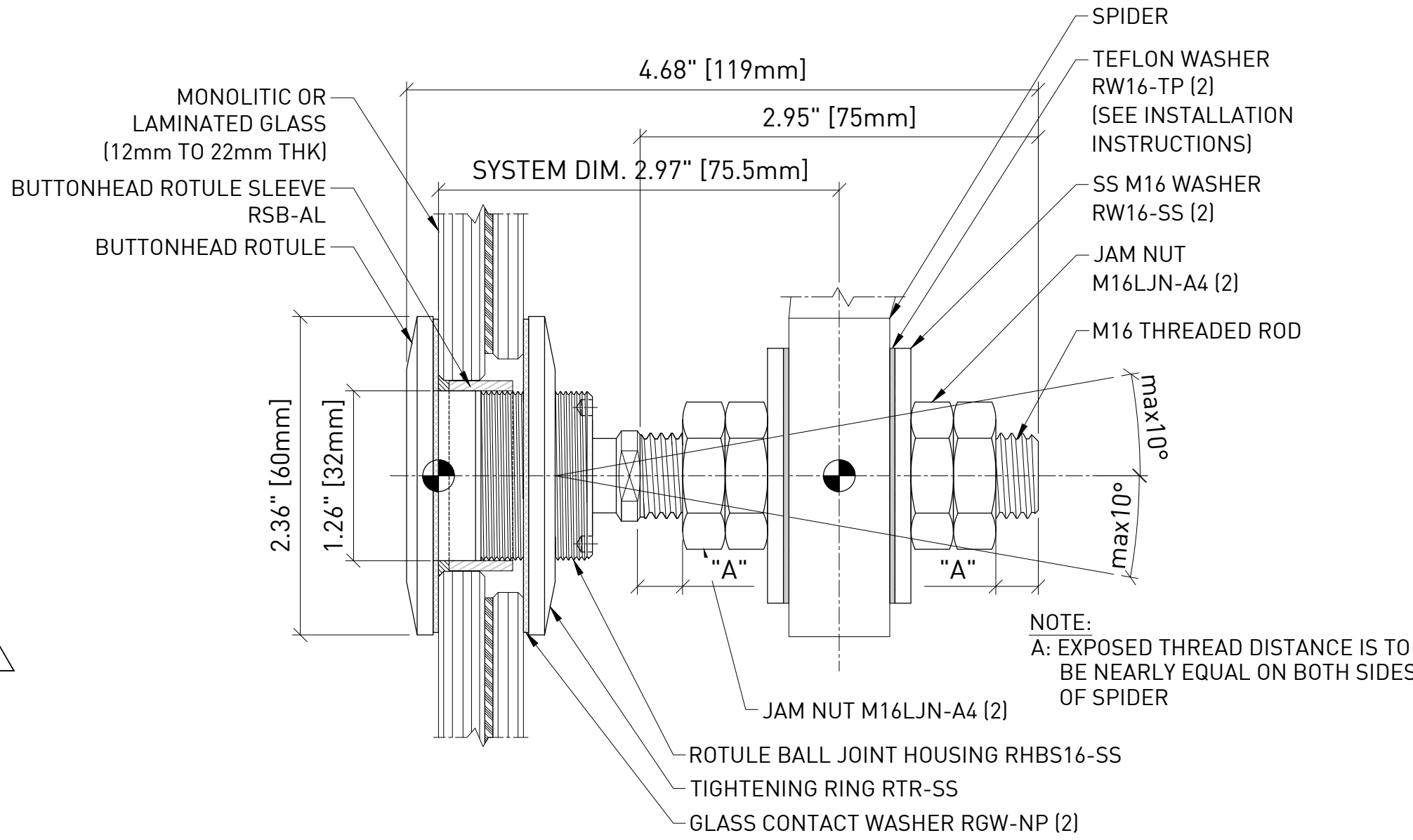


GLASS PANEL BEARING SCHEME

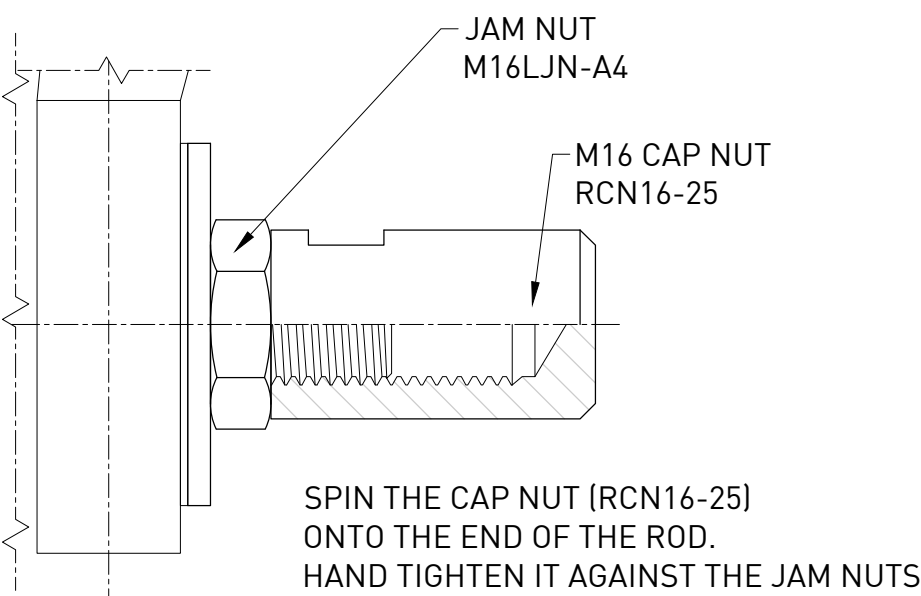
GLASS INSTALLER NOTE:
EACH PANEL OF GLASS IS DESIGNED TO BE ABLE TO MOVE AS SHOWN BELOW. ON THE ROTULES, THE INNER JAM NUTS SHOULD ONLY BE HAND TIGHTENED AGAINST THE WASHERS (U.N.O.) TO MAKE SURE THE INNER JAM NUTS WILL NOT BACK OFF. FULLY TIGHTEN OUTER NUTS AGAINST THEM. THIS WILL ALLOW THE ROD TO MOVE AS DESIGNED.



INSTALLATION RB22-16 BUTTONHEAD ROTULE UNIT



OPTIONAL

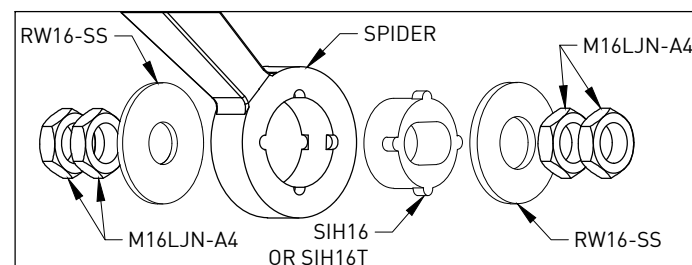


GLASS PANEL BEARING TYPES

DRAWINGS NOT TO SCALE

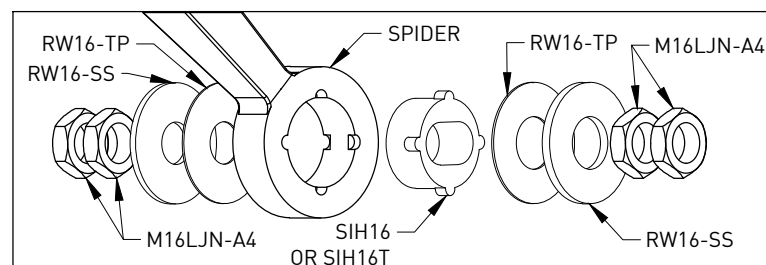
FIXED LOCATION

- USE INSERT SIH16V AT ALL FIXED POINTS, PREVENTING ROTATION BY PLACING THE TEETH IN THE PROVIDED HOLES. ENSURE THAT THE SLOT IS HORIZONTAL. THE INSERT CAN BE PLACED ON EITHER SIDE OF THE SPIDER. IF, UPON INSPECTION, THE ROTULE WILL NOT PASS THROUGH INSERT SIH16, REPLACE THE INSERT WITH THE ±3mm TOLERANCE INSERT SIH16T AND FIT AS NECESSARY, ENSURING THAT THE SLOT IS HORIZONTAL.
- ON PROJECTS USING PLATE SPIDERS, JUST MAKE SURE THERE IS A SLOTTED HOLE AT THE FIXED LOCATION
- DISCARD THE TWO TEFLON WASHERS (RW16-TP) PACKAGED WITH THE ROTULE, AND PLACE THE STAINLESS STEEL WASHERS (RW16-SS) DIRECTLY AGAINST THE SPIDER.
- TIGHTEN THE INNER JAM NUTS (M16LJN-A4) TO A TORQUE OF 40 FOOT-POUNDS (55Nm) AGAINST THE S.S. WASHERS.
- TIGHTEN THE JAM NUTS AGAINST EACH OTHER TO A TORQUE OF 40 FOOT-POUNDS (55Nm)



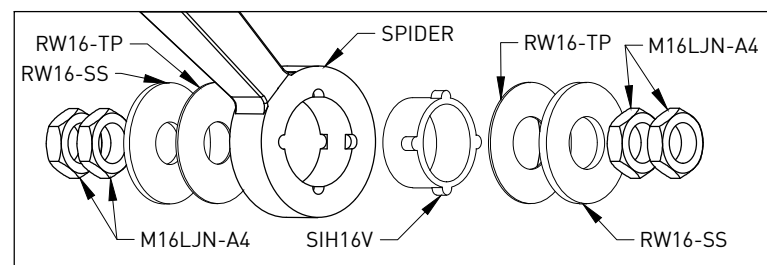
SLOTTED LOCATION

- USE INSERT SIH16 AT ALL SLOTTED POINTS, PREVENTING ROTATION BY PLACING THE TEETH IN THE PROVIDED HOLES. ENSURE THAT THE SLOT IS HORIZONTAL TO ALLOW PROPER MOVEMENT. THE INSERT CAN BE PLACED ON EITHER SIDE OF THE SPIDER. IF, UPON INSPECTION, THE ROTULE WILL NOT PASS THROUGH INSERT SIH16, REPLACE THE INSERT WITH THE ±3mm TOLERANCE INSERT SIH16T AND FIT AS NECESSARY, ENSURING THAT THE SLOT IS HORIZONTAL.
- ON PROJECTS USING PLATE SPIDERS, JUST MAKE SURE THERE IS A SLOTTED HOLE AT THE SLOTTED LOCATION
- INSTALL A TEFLON WASHER (RW16-TP) ON EITHER SIDE OF THE SPIDER TO PERMIT SLIDING. PLACE THE STAINLESS STEEL WASHERS (RW16-SS) AGAINST THE TEFLON WASHERS.
- HAND TIGHTEN THE INNER JAM NUTS (M16LJN-A4) AGAINST THE S.S. WASHERS. TIGHTEN THE OUTER NUTS AGAINST THEM TO A TORQUE OF 40 FOOT-POUNDS (55Nm)



OVERSIZED LOCATION

- USE INSERT SIH16V AT OVERSIZED LOCATIONS.
- ON PROJECTS USING PLATE SPIDERS, JUST MAKE SURE THERE IS A OVERSIZED HOLE AT THE OVERSIZE LOCATION
- INSTALL A TEFLON WASHER (RW16-TP) ON EITHER SIDE OF THE SPIDER TO PERMIT SLIDING. PLACE THE STAINLESS STEEL WASHERS (RW16-SS) AGAINST THE TEFLON WASHERS.
- HAND TIGHTEN THE INNER JAM NUTS (M16LJN-A4) AGAINST THE S.S. WASHERS. TIGHTEN THE OUTER NUTS AGAINST THEM TO A TORQUE OF 40 FOOT-POUNDS (55Nm)



INSTALLATION NOTES FOR BUTTONHEAD ROTULES RB22-16

NOTE: THE BELOW IS ONLY AN ABBREVIATED VERSION OF THE NOVUM PSG INSTALLATION GUIDELINES. THE INSTALLATION GUIDELINES SHOULD BE CONSIDERED BEFORE INSTALLATION START.

INSPECTION OF THE ROTULE ON SITE:
BEFORE THE ROTULE UNITS ARE INSTALLED INTO THE GLASS PANELS, EACH INDIVIDUAL ROTULE ASSEMBLY AND ITS COMPONENTS MUST BE INSPECTED FOR SCRATCHES, UNIMPEDED MOVEMENT, DAMAGE TO THE THREAD, DAMAGE TO THE WASHERS AND THE PERIMETER EDGES OF THE RINGS, OR ANY OTHER DEFECT. DO NOT USE DAMAGED ROTULES.

THE SIZE OF ALL GLASS HOLES MUST BE CHECKED. PLACE A ROTULE SLEEVE INTO EACH HOLE (UNLESS INSTALLED BY GLASS MANUFACTURER) AND REMOVE ANY EXCESS INTERLAYER THAT MAY BE IMPEDING A PROPER FIT. MAKE SURE TO LEAVE SOME AIR CAVITY ENCLOSED CAPTURED BY THE ROTULE INSIDE THE GLASS HOLE.

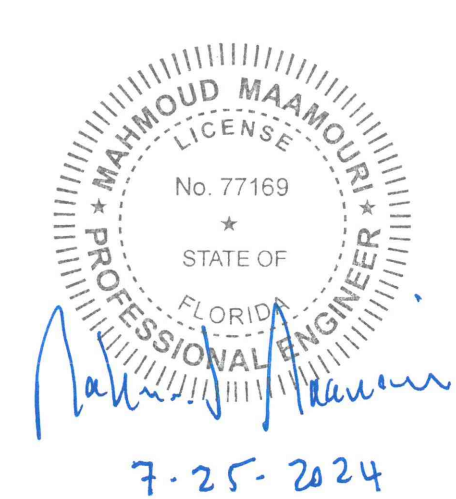
- REMOVE THE TIGHTENING RING (RTR-SS), BOTH GLASS CONTACT WASHERS (RGW-NP), AND THE ROTULE SLEEVE FROM THE ROTULE ASSEMBLY.
- WHILE DISASSEMBLED, CLEAN THE ROTULE HOUSING AND THE REMOVED PARTS WITH ISOPROPYL ALCOHOL OR XYLENE.
- CLEAN THE HOLE IN THE GLASS AND THE SURFACES AROUND IT.
- PLACE A SMALL BEAD OF SILICONE ON THE UNDERSIDE OF THE BUTTONHEAD CAP ALL AROUND THE INNER EDGE OF THE ROTULE HEAD. PUT ONE GLASS CONTACT WASHER AGAINST THE UNDERSIDE OF THE BUTTONHEAD CAP. PLACE ANOTHER BEAD OF SILICONE ON THE UNDERSIDE OF THE GLASS CONTACT WASHER ALL AROUND THE INNER EDGE OF THE ROTULE HEAD.
- SLIDE THE ROTULE SLEEVE INTO THE BEAD OF SILICONE AT THE CONTACT WASHER APPLIED IN THE PREVIOUS STEP. PRESS THE ROTULE SLEEVE INTO THE CONTACT WASHER FIRMLY ENOUGH TO BRING THE ROTULE HEAD, CONTACT WASHER, AND SLEEVE INTO CLOSE CONTACT
NOTE: FOR 10mm-13mm GLASS, USE A 9mm LONG SLEEVE (RSB9-AL), FOR 13.5mm-15mm GLASS USE A 13mm LONG SLEEVE (RSB13-AL), INSTEAD OF THE 16mm LONG SLEEVE (RSB16-AL) THAT IS PART OF THE ASSEMBLY. DISCARD THE RSB16-AL U.N.O
- INSERT THE ROTULE THAT HAS BEEN FITTED WITH THE SLEEVE INTO THE GLASS HOLE, ENSURING THAT THE OUTER EDGE OF THE SLEEVE REMAINS FLUSH WITH THE EXTERIOR FACE OF GLASS BY INSPECTING THE SLEEVE FROM THE INTERIOR SIDE OF THE HOLE.
- PLACE THE SECOND GLASS CONTACT WASHER OVER THE ROD AND ROTATE THE TIGHTENING RING AGAINST THE WASHER SO THAT IT IS SNUG TIGHT AGAINST THE GLASS. CLEAN OFF ANY EXCESS SILICONE ON EITHER SIDE OF THE GLASS.
- 7.1. (ALTERNATE STEP 7) FOR GLASS EXPOSED ON THE TIGHTENING RING SIDE) PLACE A SMALL BEAD (1/8" DIAMETER) OF SILICONE ON THE FACE OF THE SS TIGHTENING RING AROUND THE THREADED HOLE AND PRESS TOGETHER WITH THE SECOND GLASS CONTACT WASHER. PLACE ANOTHER SMALL BEAD (1/8" DIAMETER) OF SILICONE ON THE FACE OF THE CONTACT WASHER. PLACE THE ASSEMBLED TIGHTENING RING AND CONTACT WASHER OVER THE ROD AND ROTATE THE TIGHTENING RING UNTIL SNUG TIGHT AGAINST THE GLASS. CLEAN OFF ANY EXCESS SILICONE ON EITHER SIDE OF THE GLASS.
- LIFT THE GLASS PANEL, CENTERING THE THREADED RODS OVER THE SPIDER HOLES. PLACE ONE STAINLESS STEEL WASHER (RW16-SS) AND ONE TEFLON WASHER (RW16-TP) ON EACH ROD, THEN SLIDE THE RODS THROUGH THE SPIDER HOLES. OMIT THE TEFLON WASHER AT ALL FIXED-HOLE CONNECTIONS.
- POSITION THE GLASS IN THE FINAL POSITION NORMAL TO THE SPIDER; TIGHTEN THE TWO M16 LOW HEXAGON JAM NUTS (M16LJN-A4) THAT ARE PART OF THE ROTULE ASSEMBLY TO SECURE THE GLASS POSITION. THE SPIDER SHOULD BE POSITIONED NEAR THE CENTER OF THE ROTULE THREADED ROD, UNLESS NOTED OTHERWISE BY THE DESIGN ENGINEER.
- PLACE ONE TEFLON WASHER (RW16-TP) AND ONE STAINLESS STEEL WASHER (RW16-SS) ON THE THREADED ROD. OMIT TEFLON WASHER AT ALL FIXED-HOLE CONNECTIONS. SPIN ON TWO M16 LOW HEXAGON JAM NUTS (M16LJN-A4). HAND-TIGHTEN ALL NUTS TO HOLD THIS GLASS POSITION.

NOTE: AT A FIXED-HOLE CONNECTION, FULLY TIGHTEN THE NUTS AGAINST THE SPIDER. TO PREVENT THE ROTULE FROM SPINNING (AND THE SEALANT FROM FAILING), CLAMP THE FLATS OF THE THREADED ROD BEFORE TIGHTENING.

ENGINEERING NOTE:
FOR PSG FACADES USING SPIDERS WITH INSERTS:
IF GLASS WEIGHT PER ROTULE EXCEEDS 300lbf (1.33 kN),
USE 6mm THICK ROTULE WASHERS INSTEAD OF 3mm WASHERS (RW16-SS).
NOT APPLICABLE FOR ROOFS.
SEPARATE CHECK FOR CUSTOM LENGTH ROTULE RODS REQUIRED.

COMPUTERIZED STRUCTURAL DESIGN, INC.
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ENGINEER STAMP:

APPROVAL STAMP:

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9	02MAY23	MH	TR
INCLUDE DOWSIL 799			
8	21JAN22	KK	MH
UPDATE OF INSTALLATION NOTES			
7	29MAR19	KK	MH
UPDATE OF INSTALLATION NOTES			
6	02OCT17	MH	MH
UPDATE OF INSTALLATION NOTES			
5	13DEC16	KH	MH
NEW DESIGN			
REV.NO.	DATE	DWG.BY	CHK.BY

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NOVUM

PROJECT:

NOVUM PSG-SYSTEM

DRAWING DESCRIPTION
INSTALLATION DRAWING
FOR RB22-16

DRAWN BY:	KH	DATE:	13DEC16
CHECKED BY:	MH	APPROVED BY:	MH
SCALE:	1:1	PROJECT MANAGER:	-

PROJECT NUMBER:
PS-600 SERIES

SHEET NUMBER
PS-681

REV
9