

PART No.

M 450480

GA

ENGINEERING CHANGES			
ECN No.	DATE	REV	SIGN
8678	30.03.02	N	SD
8817	28.8.02	I	AGM

DIM 17.4 was 22.4. Drawing redrawn.

9003 9.1.03 2 KPN  
Dimension 56.8,  $\phi 53$  contraction  $\phi 56$  max. and angle 15° added.  
Master cylinder mounting bolt torque 13/16 Nm was 13/10 Nm. Mounting bolt torque 20/25 Nm was 13/10 Nm. Lock nut torque 20 Nm was 35±5 NM  
Fork DIM 15.2±0.2 was 15.3±0.5. Critical characteristics, geometric tolerance, maximum stroke note and sealing surface....  
.....  $\phi 55$  mm note added. Drawing redrawn.

9050 14.3.03 3 AGM  
Fork DIM 10.4 and 5x45° added. Note regarding "Valve..... JASO C452", "articulation 3°" and "for correct ..... original position added. Fork nut torque 15-20 Nm was 20 Nm Master cylinder bolt torque 10-16 Nm was 13-16 Nm Actuating force graph added. Drawing redrawn.

9084 7.05.03 4 KAK  
Jump in 440 ± 110 N was 300 ± 60 N. Graph title-Input rod travel Vs input force was Actuating force. Note regarding "Knurling for pedal position adjustment" added.  
Tolerance band for Input rod travel Vs Output force added.  
PSSC 144C issue No.3, 7.05.03 was PSSC 144C issue No.2, 14.03.03 Drawing redrawn.

9212 7.10.03 5 AGM  
PSSC 144C issue No.4 dated 7.10.03 was PSSC 144C issue No. 3, dated 7.5.03.  
Note regarding "Maximum stroke before crack off 0.7mm" deleted. Drawing redrawn.

9332 2.4.04 6 AGM  
DIM 22.4 was 17.4. Drawing redrawn.

10224 26.05.06 7 ASK  
PSSC Issue No. and date updated.

12083 16.03.11 8 RBS  
Drawing template WABCO was WABCO-TVS (India) Ltd. Drawing redrawn.

12282 23.03.12 9 RK  
Fork  $\phi 12.0\pm 0.2$  added. Fork  $\phi 8.4\pm 0.2$  and  $\phi 16.2\pm 0.2$  deleted. Drawing pictorially modified inline with fork. drawing redrawn.

12350 31.05.12 10 RK  
 $\phi 12.05\pm 0.05$  was  $\phi 12.0\pm 0.2$ . Drawing redrawn.

● CRITICAL

● MAJOR

NO SYMBOL - MINOR

PART CODE	MATERIAL	SURFACE PROTECTION
XII	PLASTIC	NO TREATMENT
XI	RUBBER	NO TREATMENT
X	STAINLESS STEEL	NO TREATMENT
IX	BRASS	NO TREATMENT
VIII	ZINC ALLOY	CHROMATED
VII	ALUMINIUM ALLOY	ANODISED
VI	ALUMINIUM ALLOY	CHROMATED
V	CAST IRON	PAINTED
IV	STEEL	POWDER COATED
III	STEEL	PAINTED
II	STEEL	PHOSPHATED
I	STEEL	ZINC PLATED

PART CODE	SIGN	DATE	MATERIAL	----
DRN	MKA	15.03.11	ALTERNATE MATERIAL	----
CHD	RBS	15.03.11	SURFACE PROTECTION	----
APD	SN	15.03.11	RAW PART No.	----

LABEL INDICATING  
ASSEMBLY PART NUMBER

M 450480

60

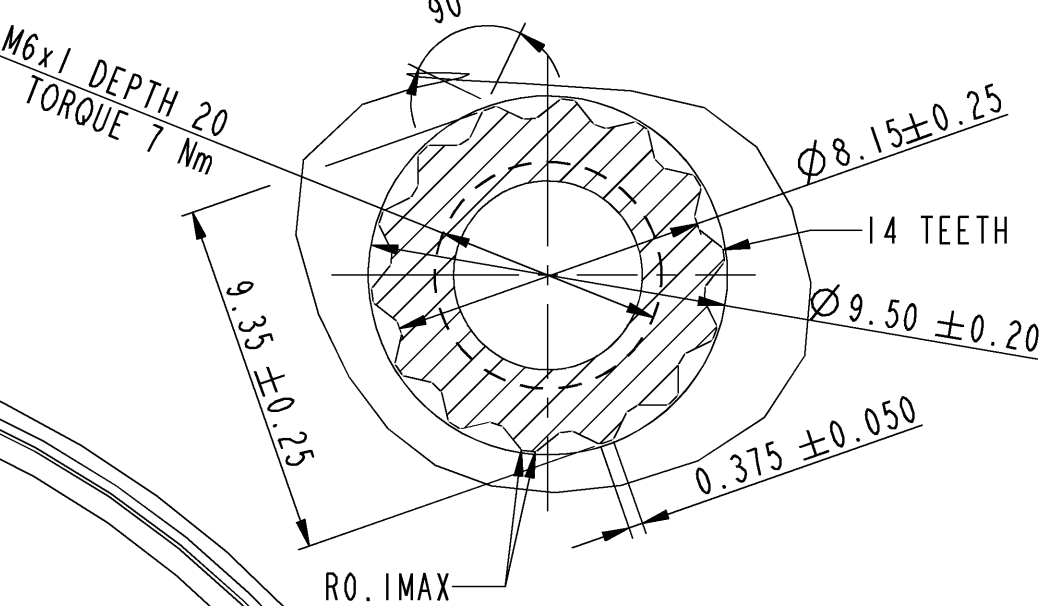
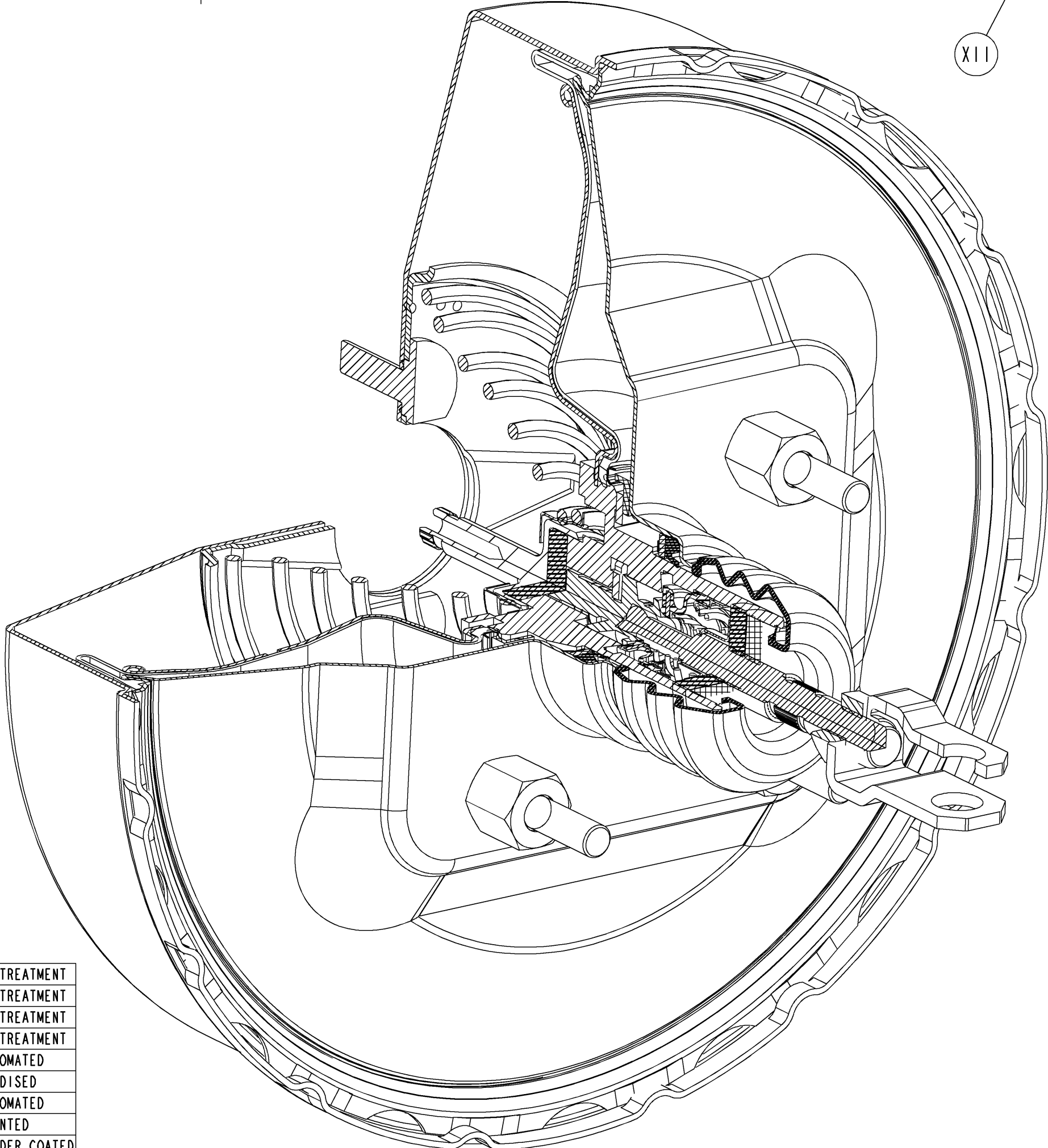
30

$\phi 115$

R90

30°

D



SECTION G-G  
SCALE 5:1  
STAND IN 14.9±1.2  
MAINTAINED WITH  
APPLIED VACUUM OF  
700mm OF Hg

SEALING SURFACE TO BE  
FREE FROM DRAW MARKS,  
TOOL MARKS, PAINT  
PEEL-OFF FOR  $\phi 55$  mm

0.4

22.3

111

G

G

11

I

2 BOLTS, M8x1.25  
TORQUE 13±3 Nm

$\phi 0.8$  D

XII

DO NOT SCALE IF IN DOUBT ASK

106

56.8

30

min.

A

85 max.

$\phi 111.0 \pm 0.5$

22.4

XI

I

$\phi 53$

10.4

5x45°

20.0 ± 0.5

15.2 ± 0.2

9.0 ± 0.2

AT CONTRACTION

$\phi 56$  max.

E

4 BOLTS, M8x1.25  
TORQUE 22.5±2.5 Nm

0.6 A

$\phi 0.8$  E

I

111

15°

35

$\phi 11.85 \pm 0.30$

$\phi 12.95 \pm 0.30$

16.8 ± 0.5

VACUUM PUMP CONNECTION VIEW  
DRAWN WITH NON-RETURN VALVE  
CIRCUMFERENTIALLY SHIFTED

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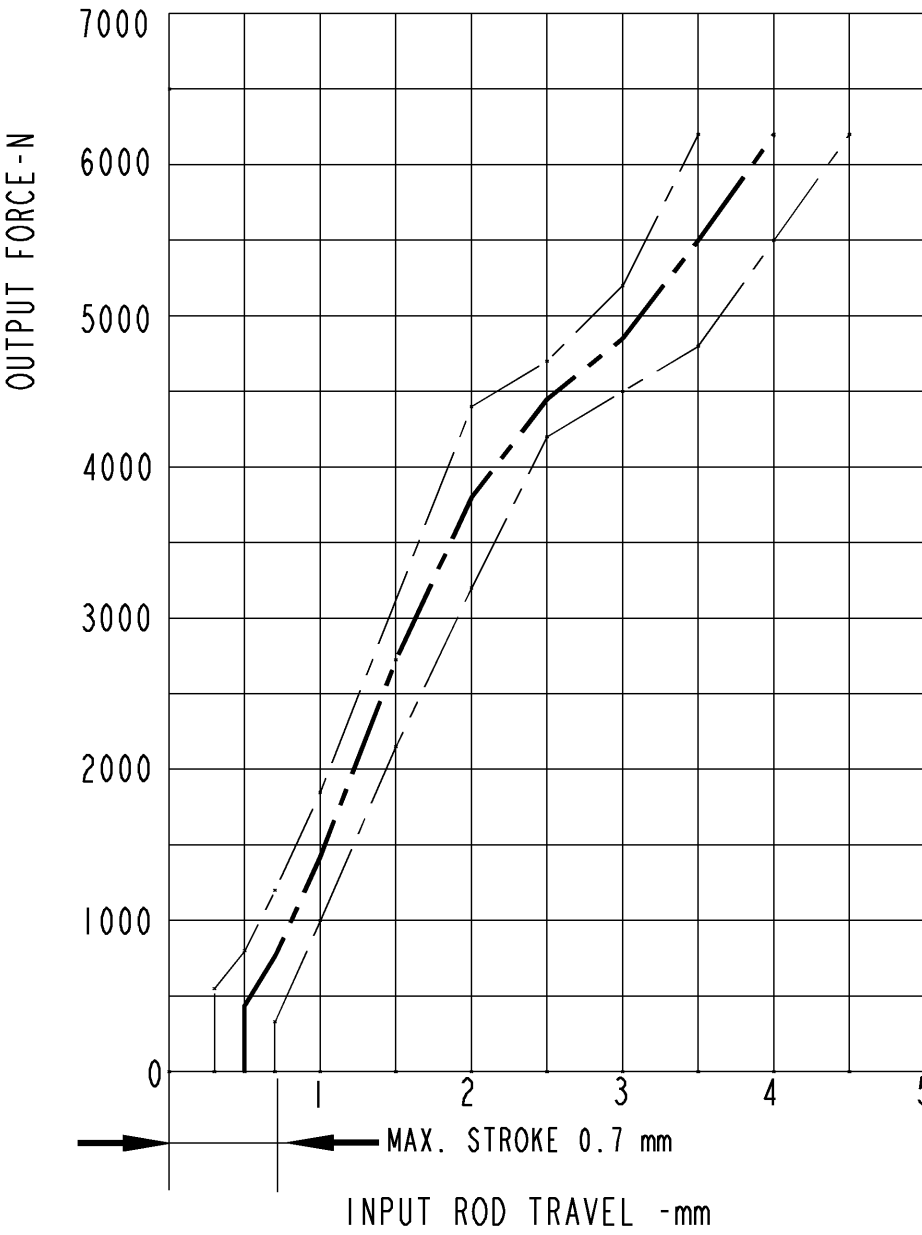
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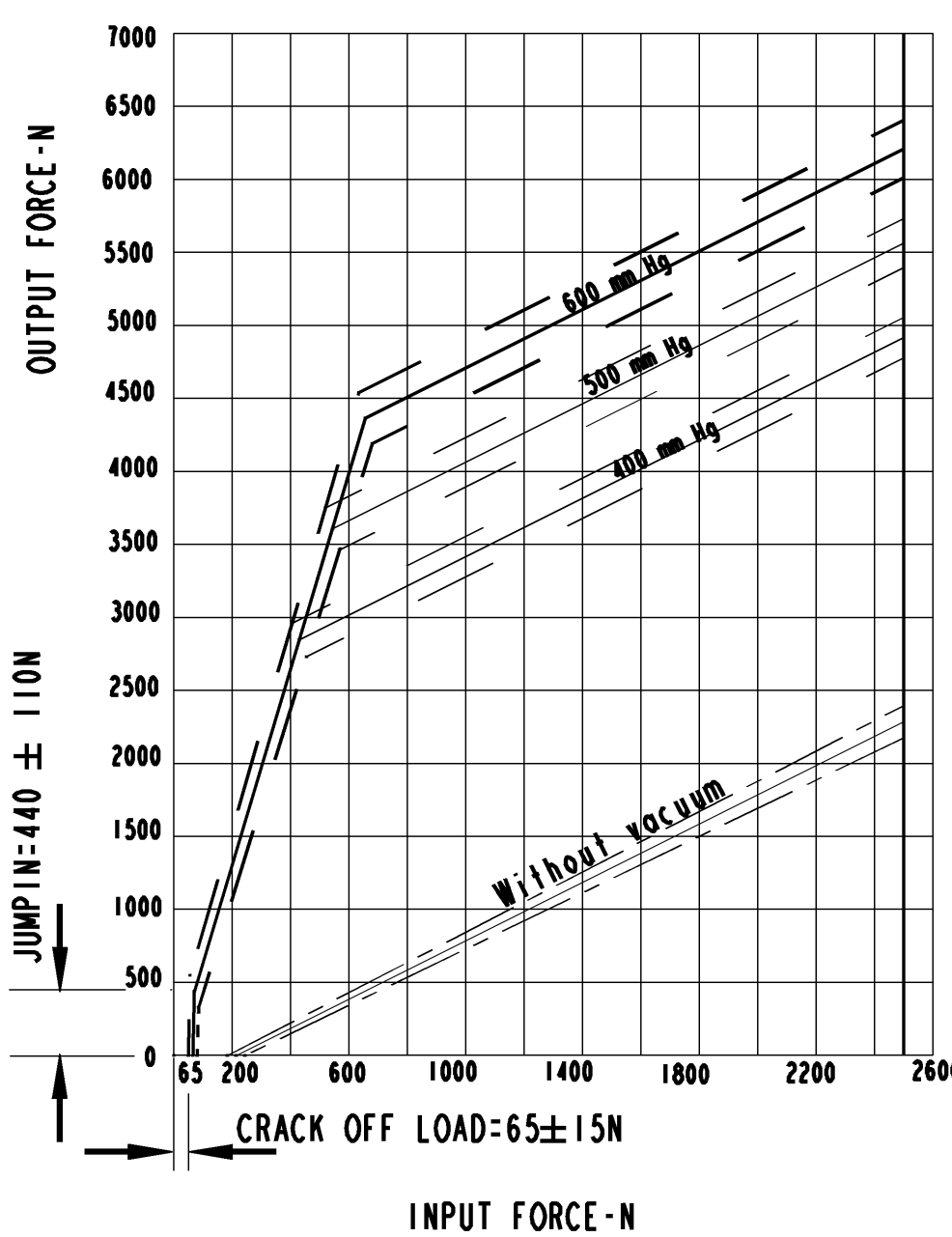
15°

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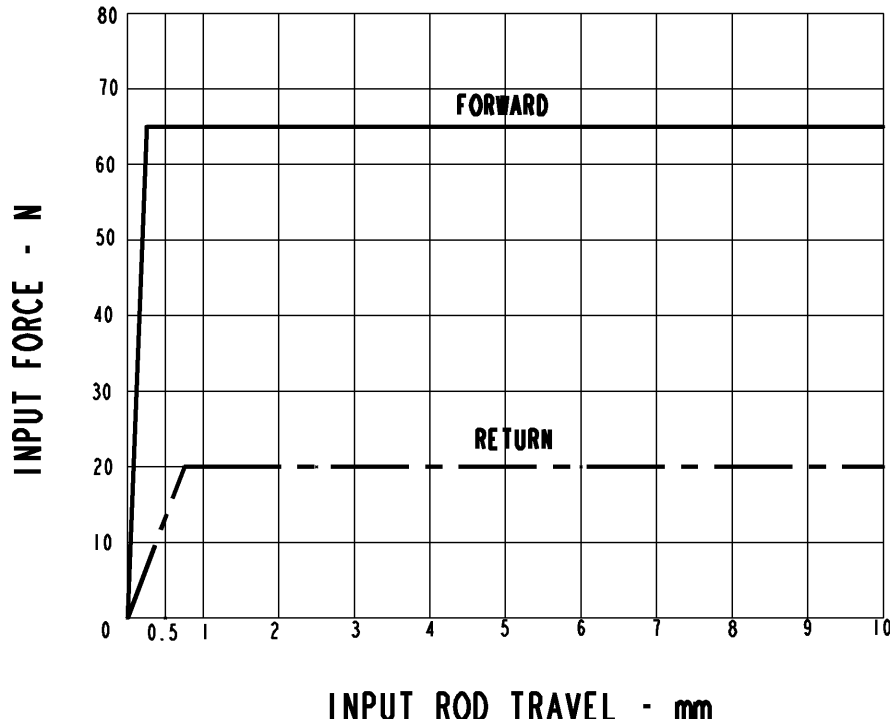
INPUT ROD TRAVEL Vs OUTPUT FORCE  
STROKE: 0 mm  
600 mm OF Hg



INPUT FORCE Vs OUTPUT FORCE  
BOOST RATIO 6.7:1  
STROKE : 10 mm



INPUT ROD TRAVEL Vs INPUT FORCE  
STROKE : 10 mm  
600 mm OF Hg



NOTES:  
VALVE WILL MEET THE REQUIREMENTS AS PER JASO C452  
PRODUCT SPECIFICATION NO. : PSSC 144C, ISSUE No.5. DATE:26.05.2006  
NOMINAL DIAMETER : 254 mm  
HOUSINGS COLOUR : BLACK  
MINIMUM STROKE : 35 mm  
MAXIMUM STROKE : 38 mm  
ARTICULATION FOR OPERATING ROD IN ANY DIRECTION 3°  
FOR CORRECT FUNCTIONING OF THE ASSEMBLY, THE BOOSTER  
INPUT ROD MUST FULLY RETURN TO ORIGINAL POSITION

**WABCO**

AMBATTUR, CHENNAI - 600058, INDIA

SCALE

1:1

1:1

1:1

1:1

10" VACUUM BRAKE VALVE

PART No.

M 450480

GA

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN mm.

REMOVE BURRS AND SHARP EDGES FROM FINISHED PARTS.  
ALL DIMENSIONS ARE AFTER SURFACE PROTECTION/ TREATMENT  
MALE THREAD TO IS 14962 (PART3) 6H : 2001  
FEMALE THREAD TO IS 14962 (PART3) 6H : 2001

GENERAL TOLERANCES

RANGE OF NOMINAL DIMENSIONS (± mm)				FORCE, POWER, PRESSURE etc.,	
≤ 50	> 50 ≤ 180	> 180 ≤ 400	> 400	(± °)	(± %)
1	2	3	4	3	10

WEIGHT (kg) 3.5