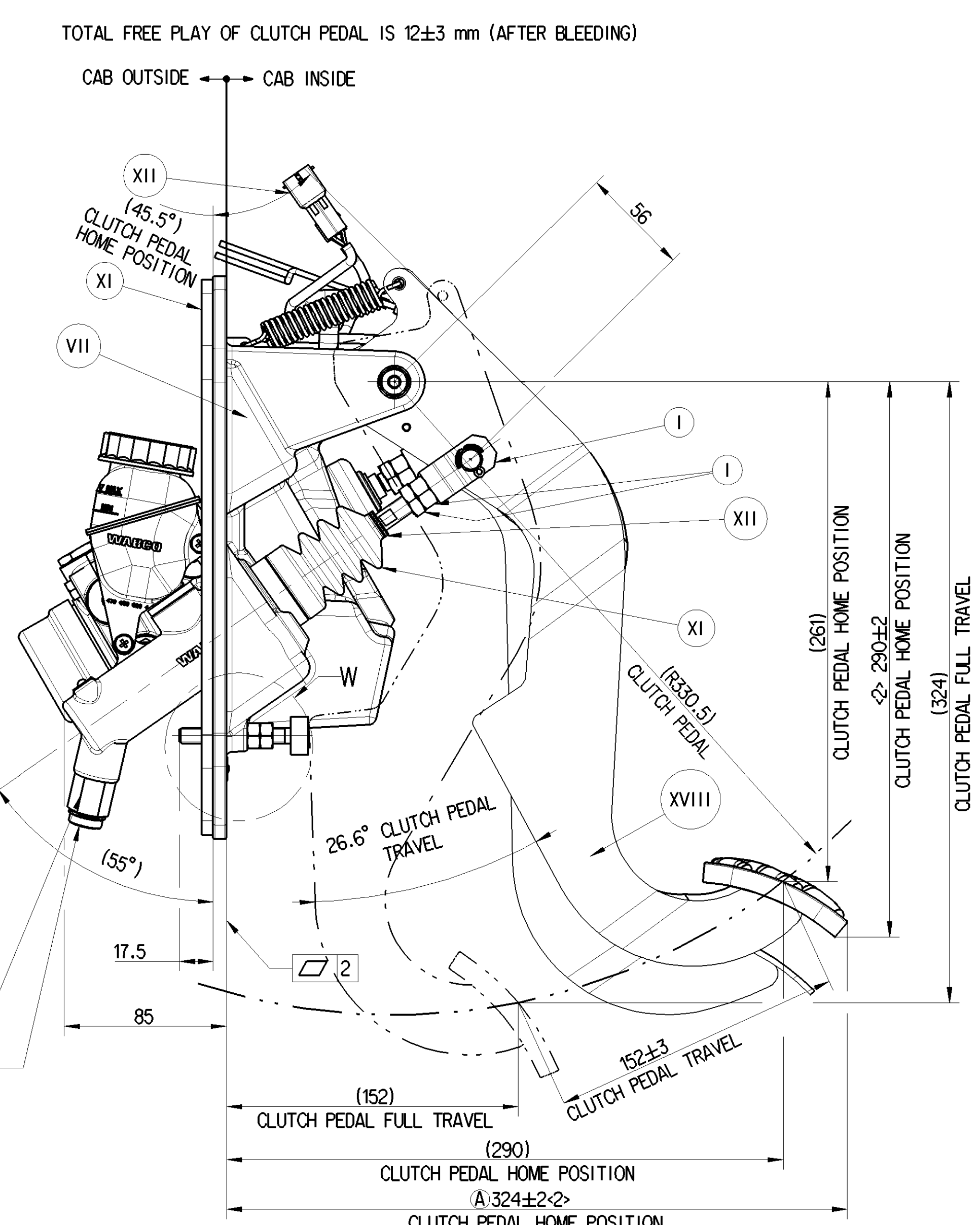
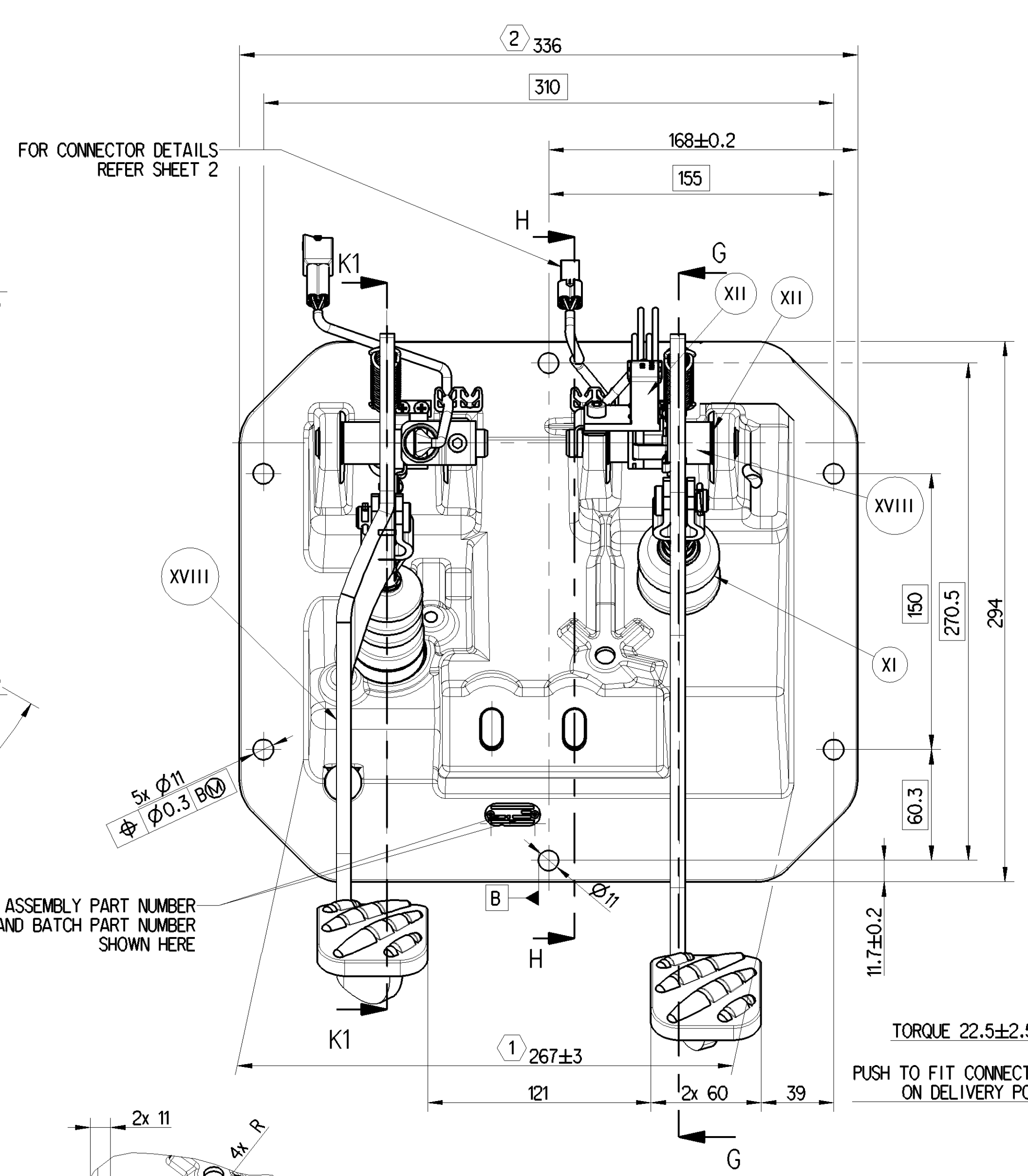
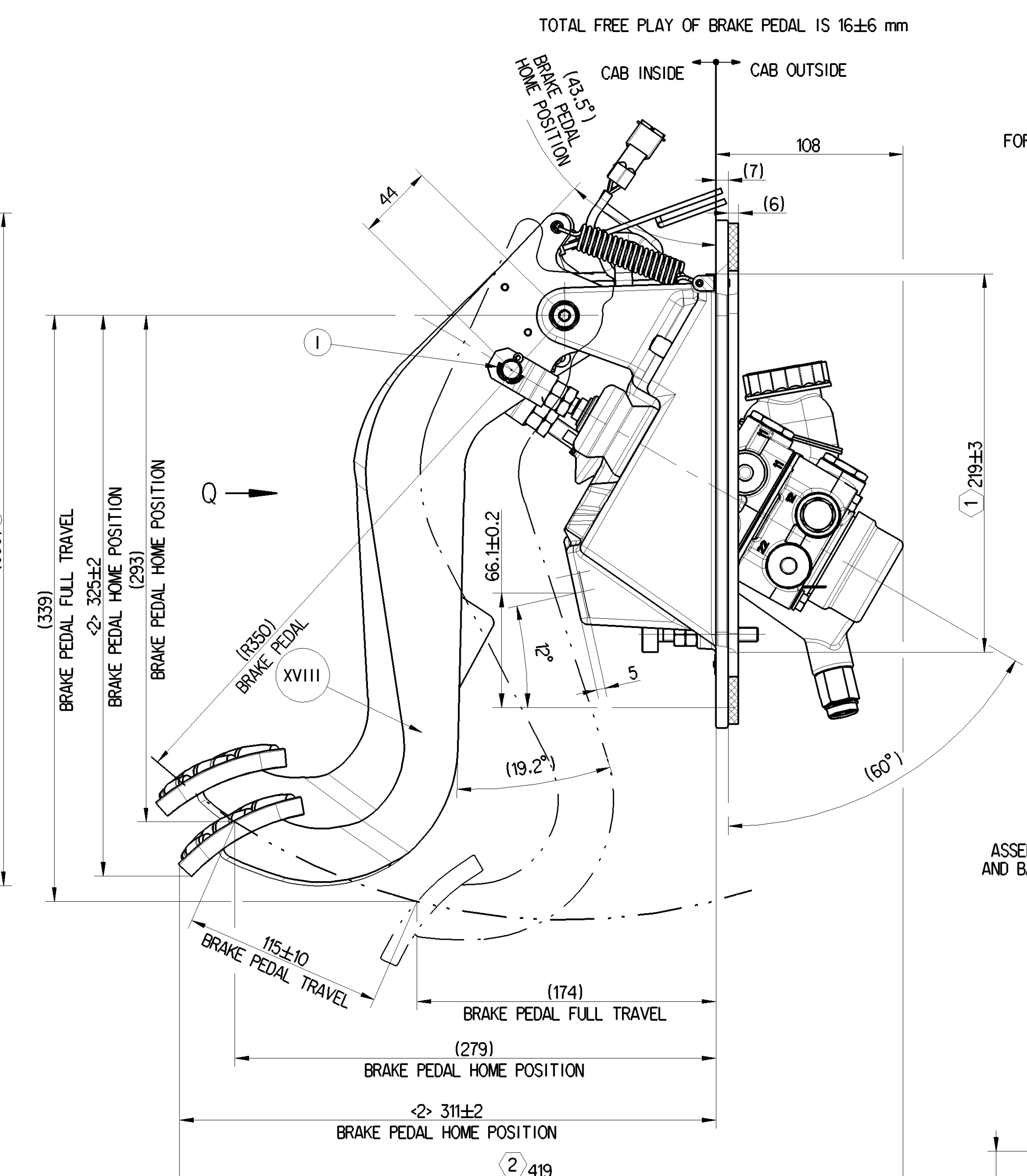
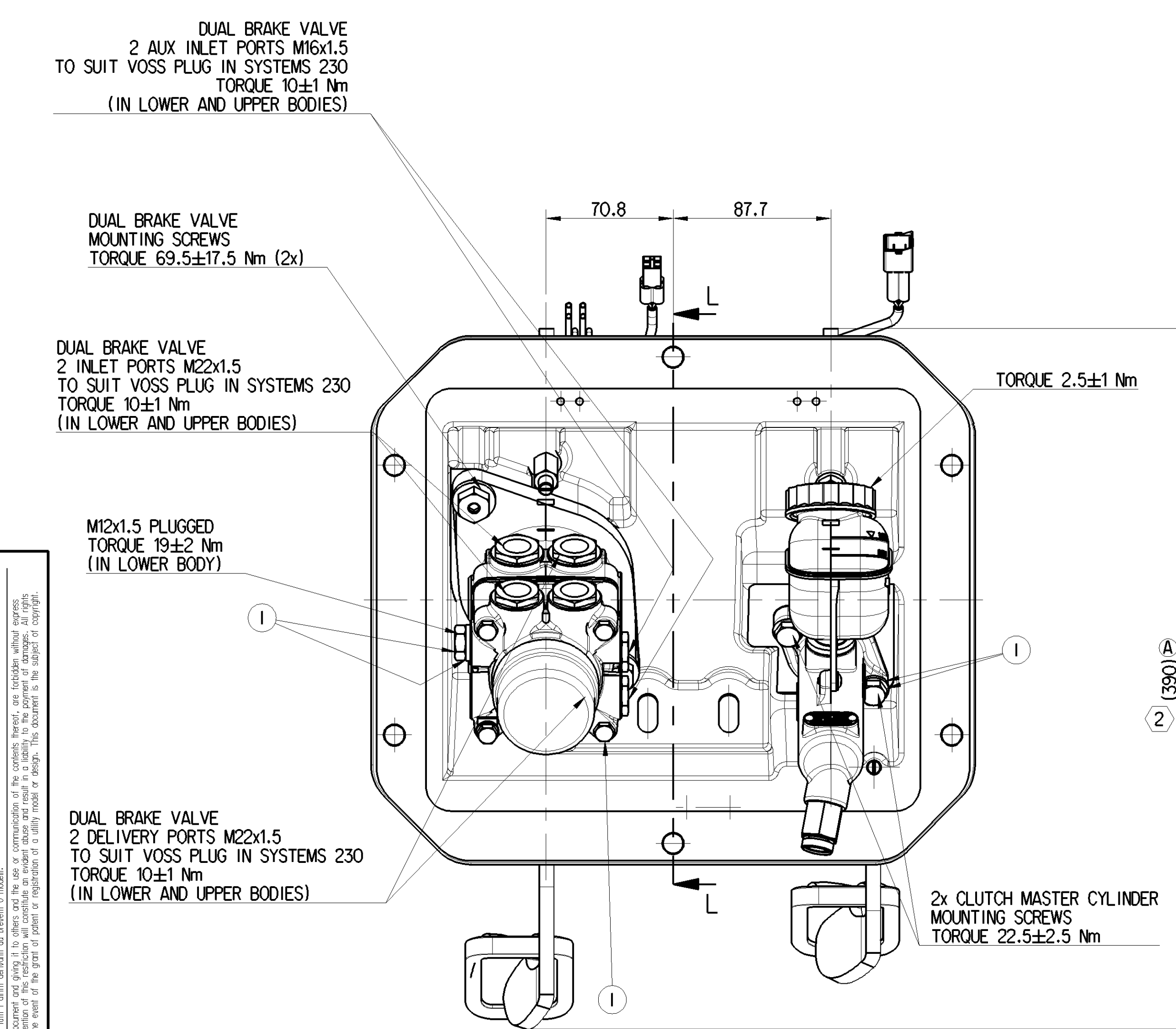
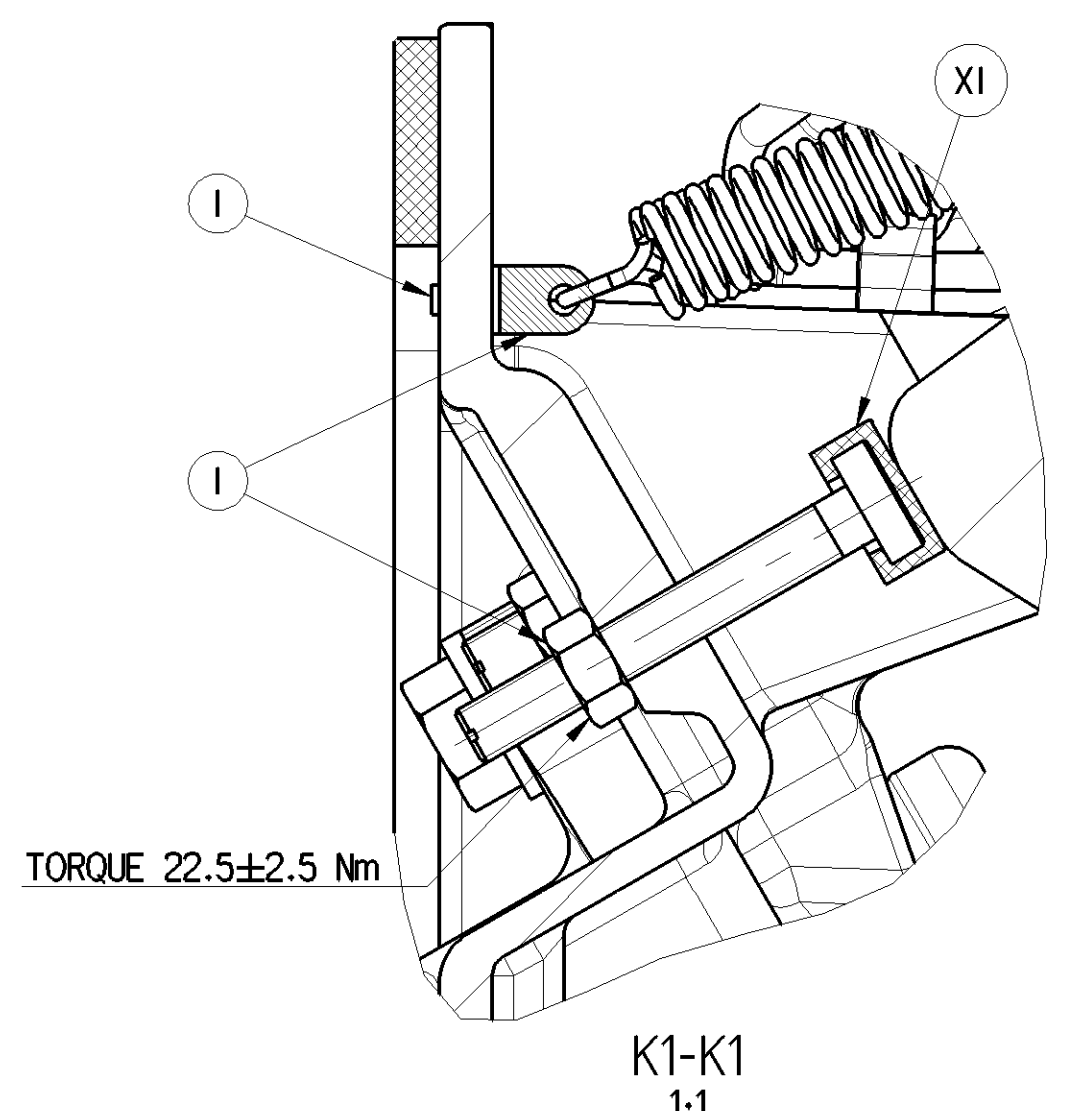
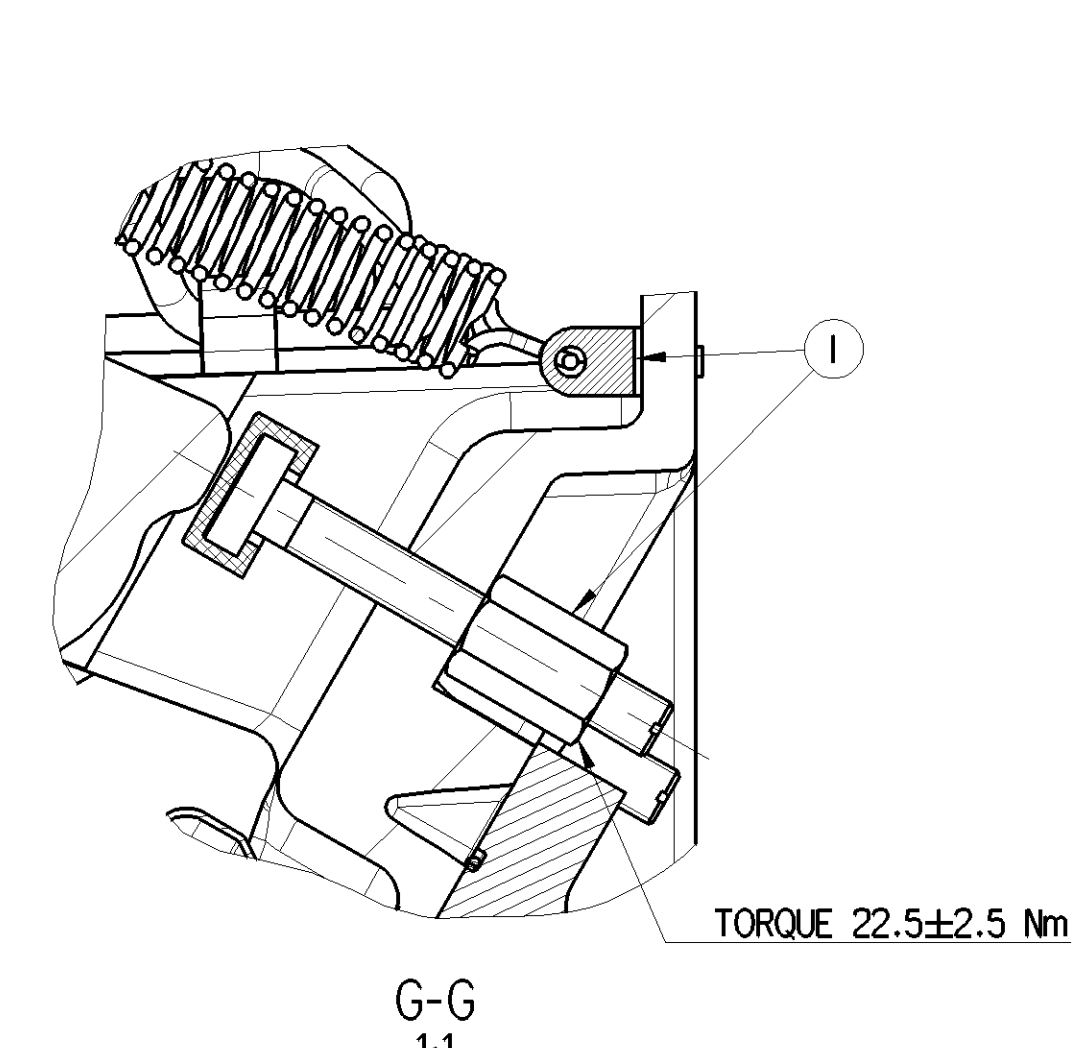
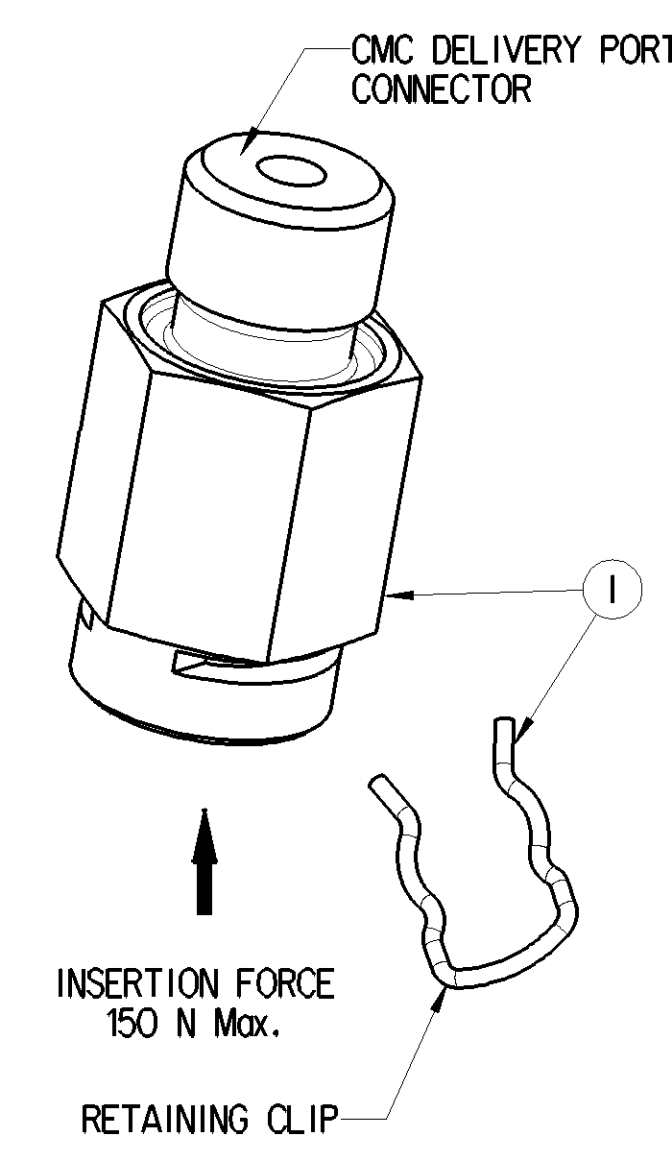
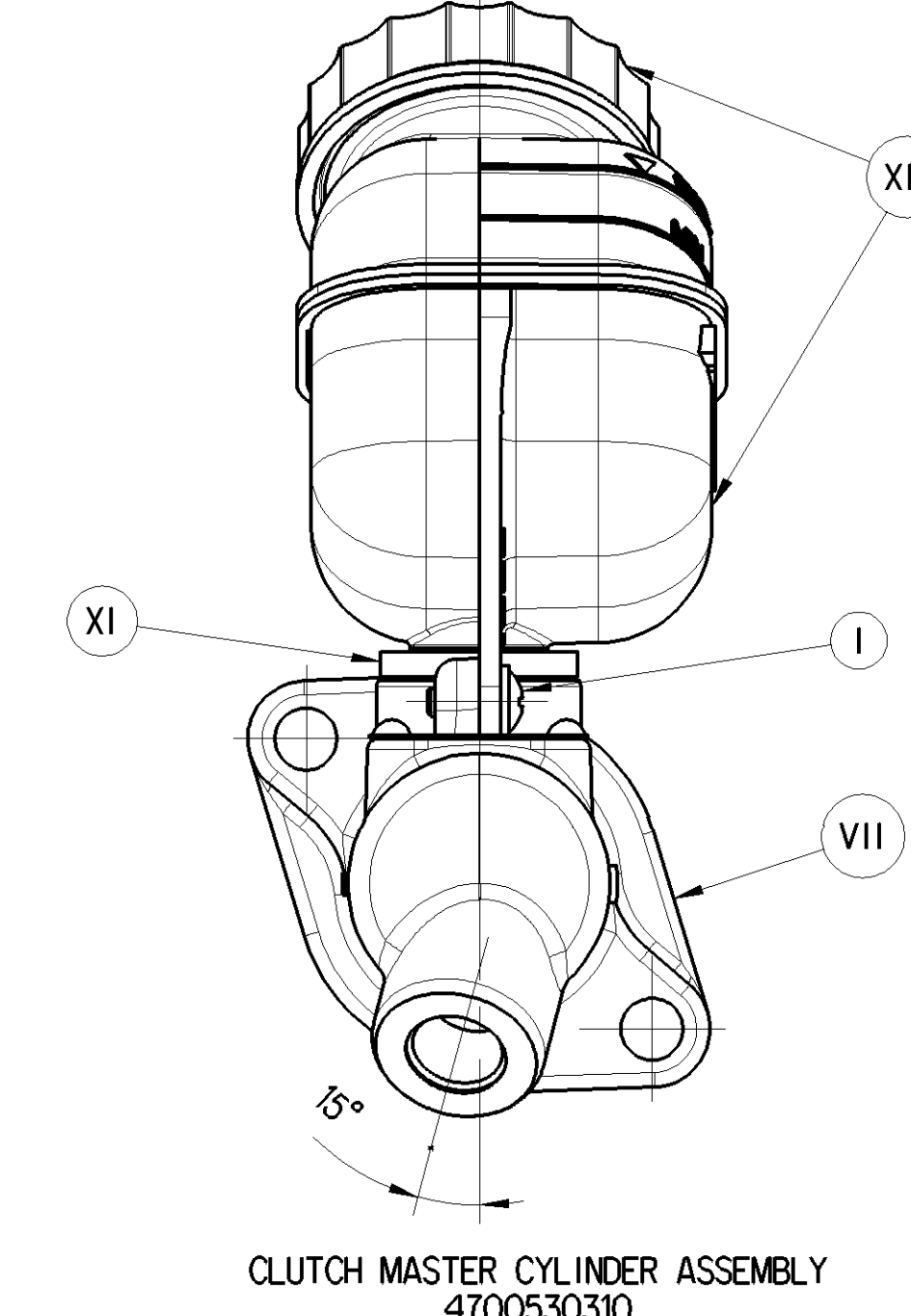
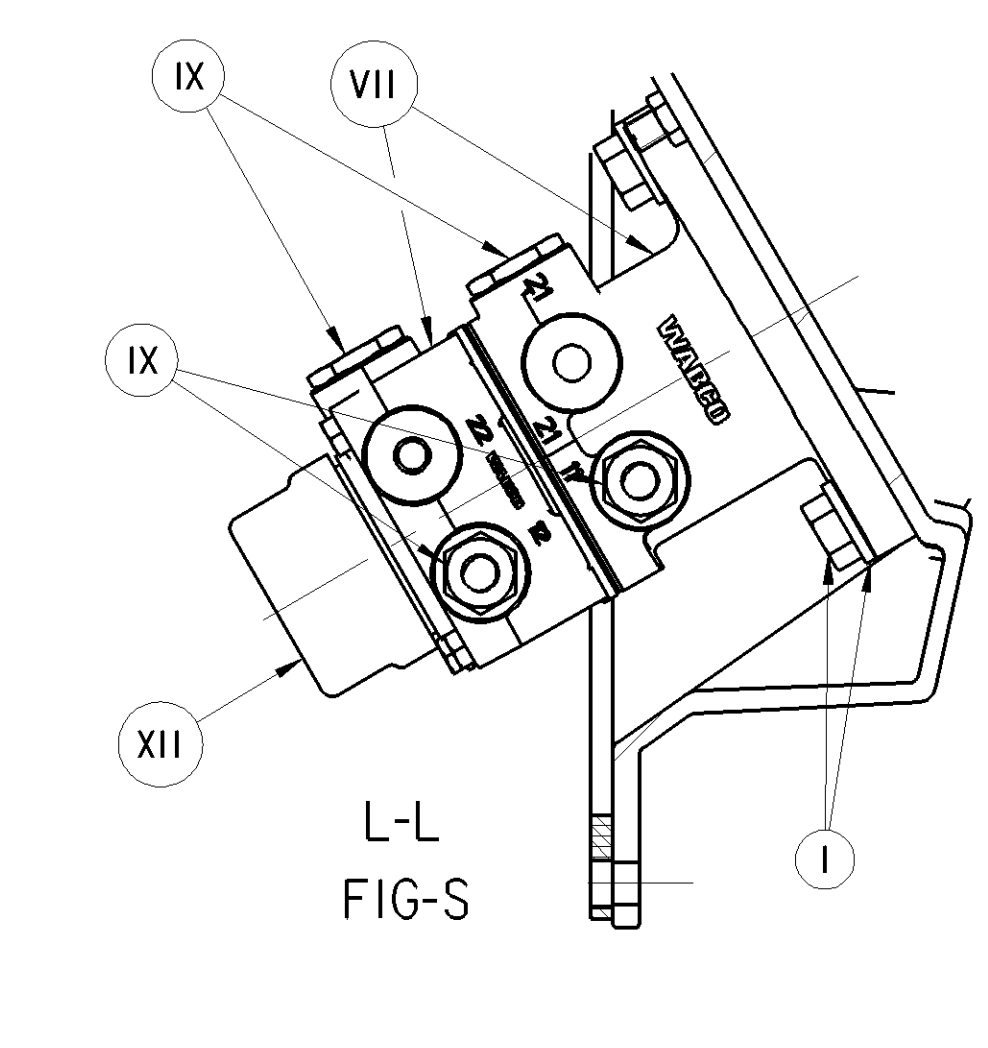
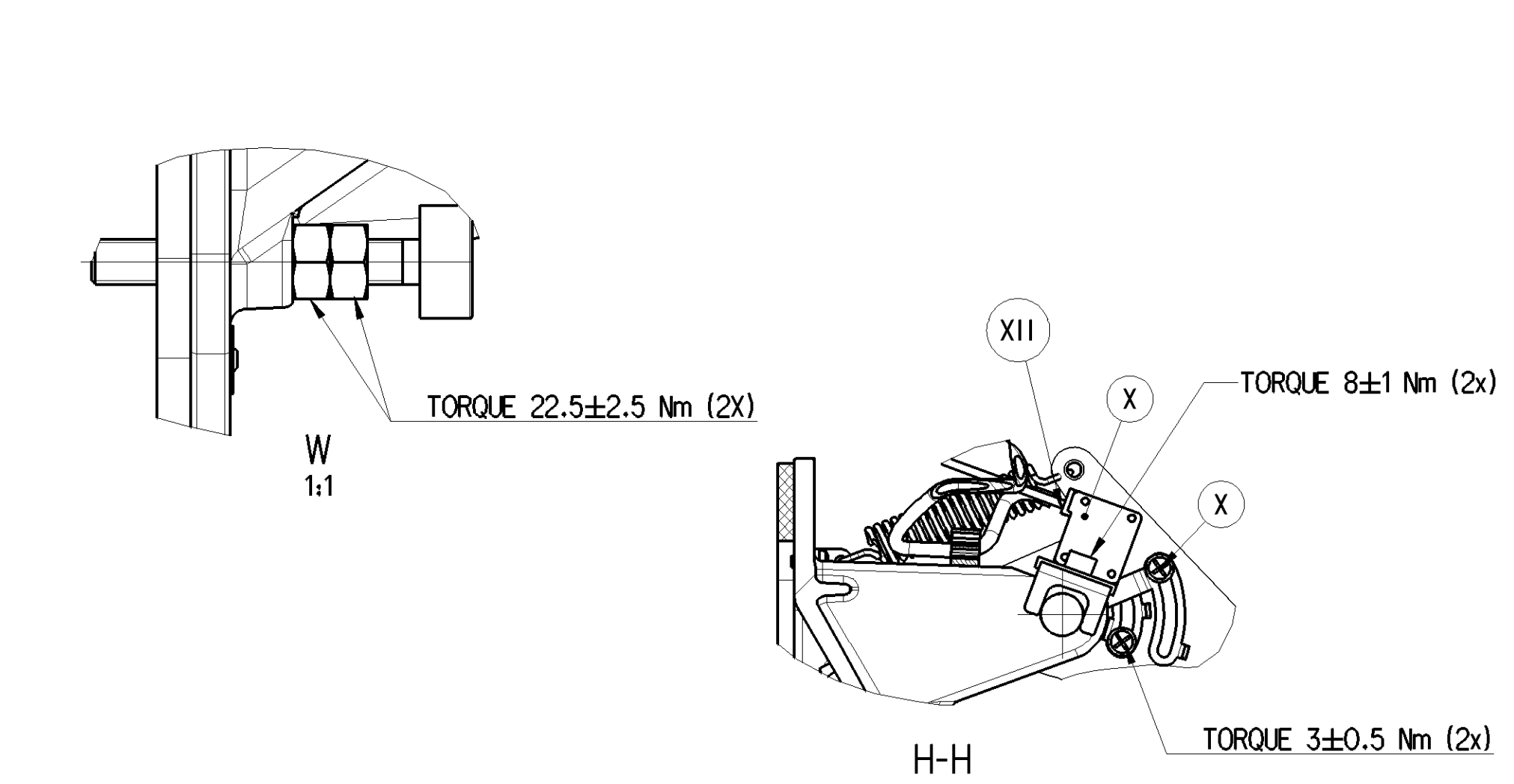
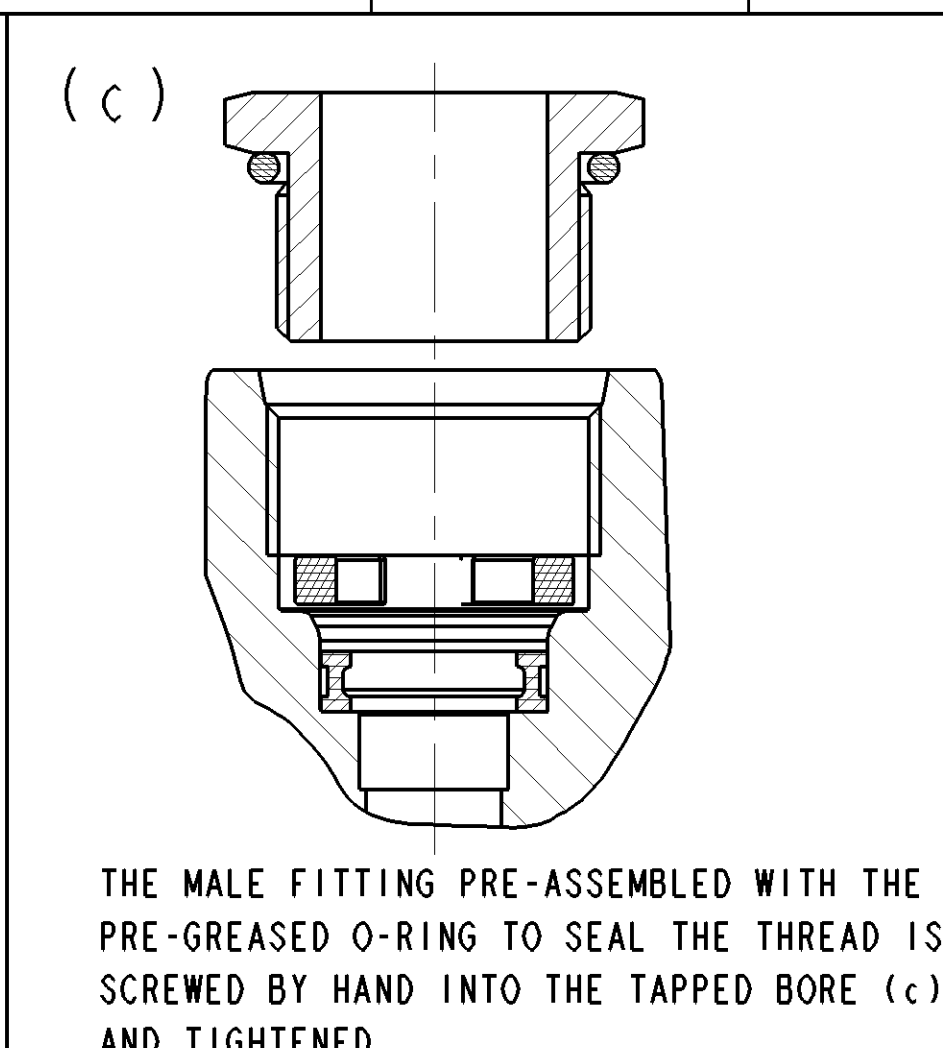
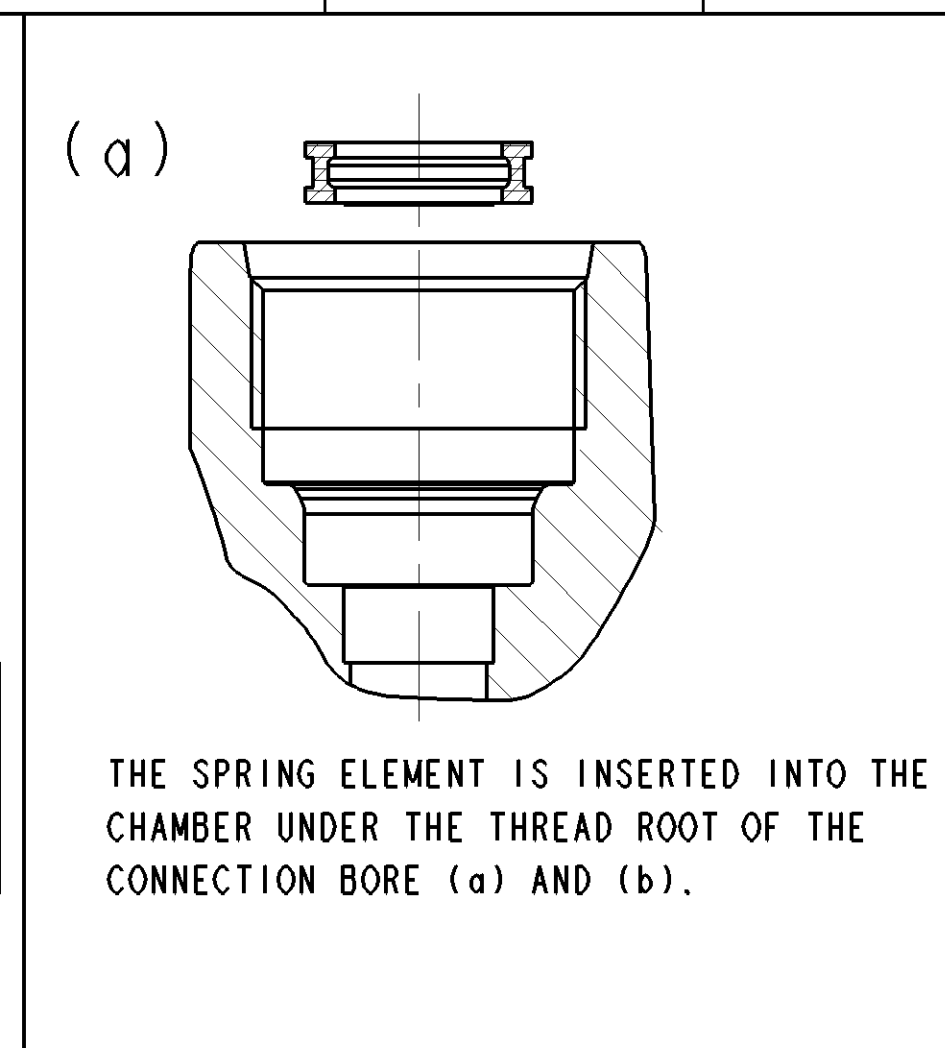
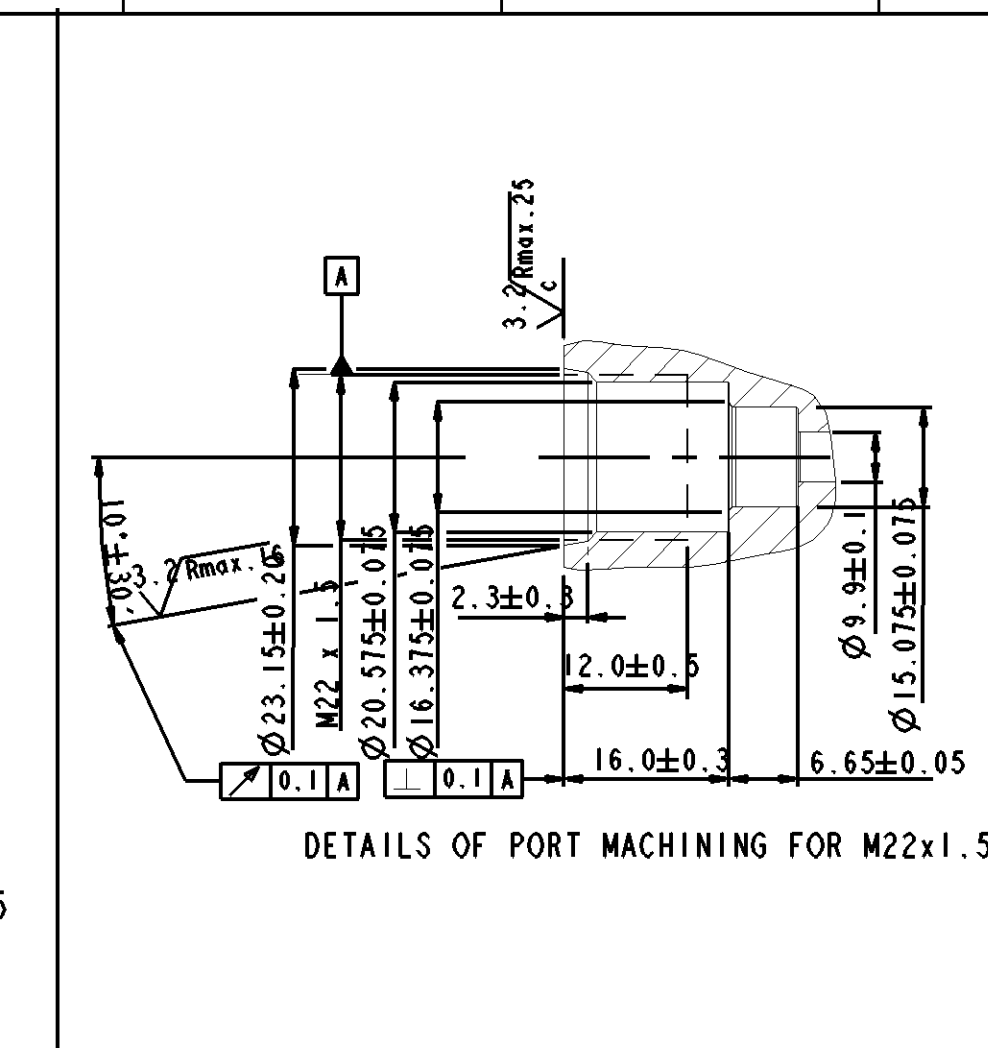


max 25



PEDAL	THICKNESS(mm)	PEDAL RATIO
BRAKE PEDAL	8	8
CLUTCH PEDAL	8	6

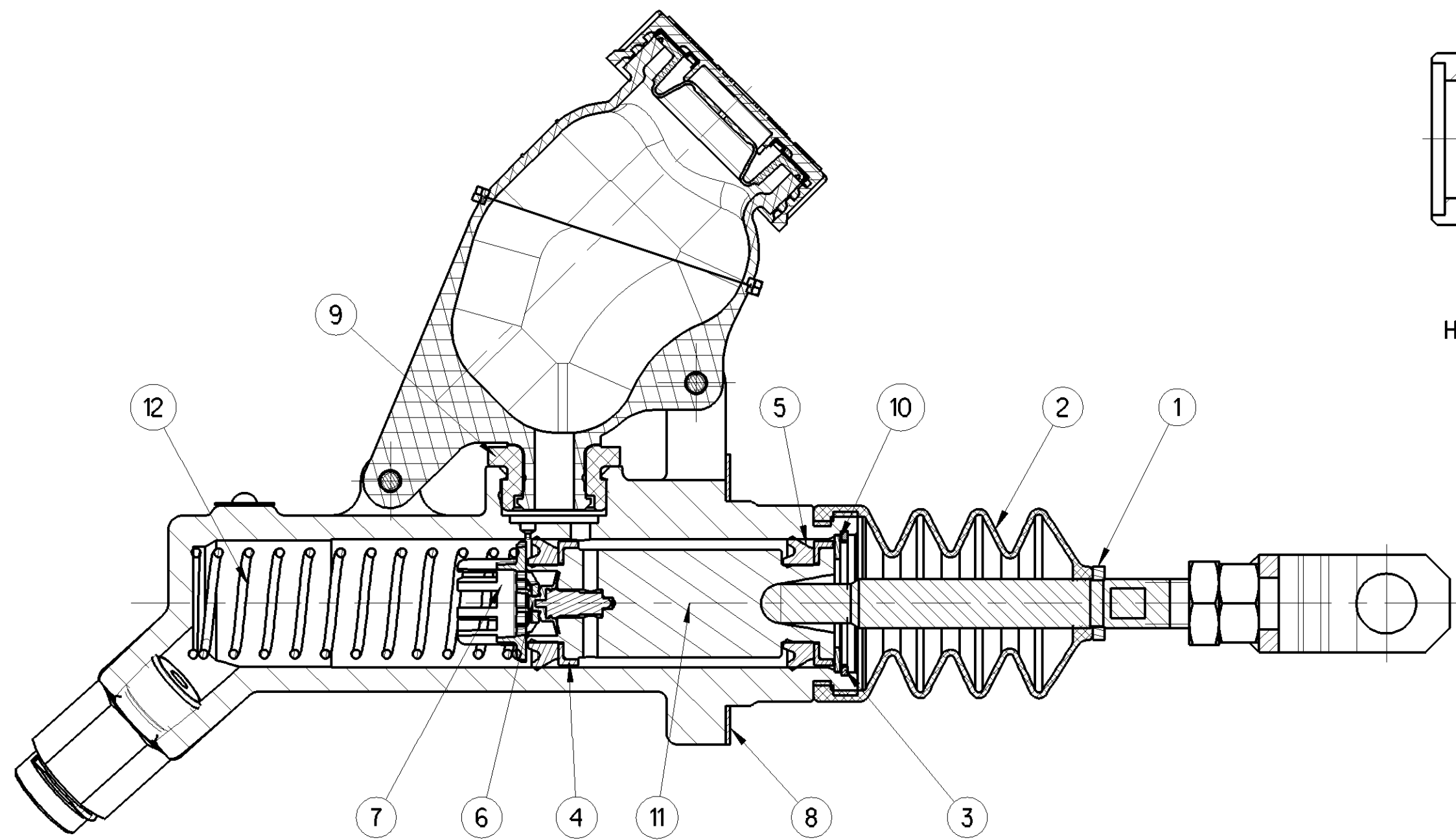
S.NO.	CUSTOMER PART NUMBER
1.	5519 2900 01 05

NOTE:

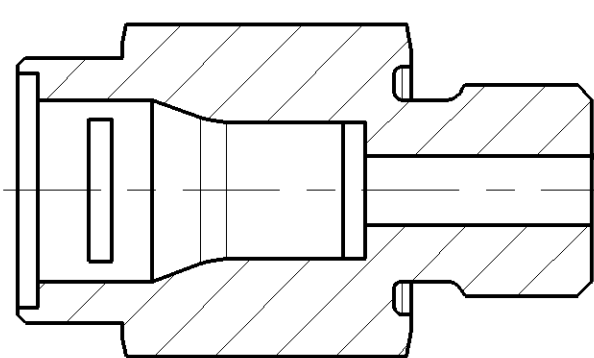
① MAXIMUM MOUNTING DIMENSION INCLUDING FILLET ON IPU - FOR INSERTION INSIDE FIREWALL

② ENVELOPE DIMENSIONS: 336x390x419

General Specifications: QSD-334-1, Size 150 1440S LP			Copyright: WABCO®		WABCO INTEGRAL PEDAL UNIT	
Further Technical Data:			Date: _____			
Doc. Code: _____ Sheets: _____			Date: _____		Date of first issue: _____	
General Tolerances: QSD-261			Drawn: Anuragm		Date of first issue: 2019-06-07	
Range of Nominal Dimensions (± mm)			Checked: Shikharabraman N		Doc Code: _____	
Class 1) $\begin{pmatrix} \pm 50 & \pm 80 \\ \pm 90 & \pm 400 \end{pmatrix}$			Shikhar N		Material No: _____	
Class 2) $\begin{pmatrix} \pm 0.5 & \pm 1.0 \\ \pm 2.0 & \pm 3.0 \end{pmatrix}$			Unit: 9.3 1/2 1		Date of first issue: 2019-06-07	
Class 3) $\begin{pmatrix} \pm 0.5 & \pm 1.0 \\ \pm 2.0 & \pm 3.0 \end{pmatrix}$			Unit: 9.3 1/2 1		Date of first issue: 2019-06-07	
Class 4) $\begin{pmatrix} \pm 0.5 & \pm 1.0 \\ \pm 2.0 & \pm 3.0 \end{pmatrix}$			Unit: 9.3 1/2 1		Date of first issue: 2019-06-07	
Tapped holes: _____			Unit: 9.3 1/2 1		Date of first issue: 2019-06-07	
1) Tolerances: Class Applied: Compliance			Unit: 9.3 1/2 1		Date of first issue: 2019-06-07	



CLUTCH MASTER CYLINDER ASSEMBLY



HYDRAULIC CONNECTOR ASSEMBLY

MINOR KIT (CMC) MSP 2/35
T.M.L KIT NO-2880 2930 01 01N
COMMON FOR ALL IPU VARIANTS

SL.NO.	DESCRIPTION	QTY	PART NO	T.M.L PART NUMBER
1	BOOT RETAINER	1	4700530504	2880 2930 99 01N
2	GAITER	1	8977500084	2880 2930 77 01N
3	RETAINING RING	1	8105180184	2880 2930 99 02N
4	GUIDE RING	2	9700014104	2880 2930 99 03N
5	LIP SEAL	2	8971616274	2880 2930 78 01N
6	VALVE	1	4700535002	2880 2930 90 01N
7	SPRING GUIDE	1	4700531504	2880 2930 99 04N
8	GASKET	1	8840073224	2880 2930 53 01N
9	GASKET	1	4700531404	2880 2930 53 02N

MAJOR KIT (CMC) MSP 2/34
T.M.L KIT NO-2880 2930 01 02N
COMMON FOR ALL IPU VARIANTS

SL.NO.	DESCRIPTION	QTY	PART NO	T.M.L PART NUMBER
1	BOOT RETAINER	1	4700530504	2880 2930 99 01N
2	GAITER	1	8977500084	2880 2930 77 01N
3	RETAINING RING	1	8105180184	2880 2930 99 02N
4	GUIDE RING	2	9700014104	2880 2930 99 03N
5	LIP SEAL	2	8971616274	2880 2930 78 01N
6	VALVE	1	4700535002	2880 2930 90 01N
7	SPRING GUIDE	1	4700531504	2880 2930 99 04N
8	GASKET	1	8840073224	2880 2930 53 01N
9	GASKET	1	4700531404	2880 2930 53 02N
10	WASHER	1	8951000044	2880 2930 92 01N
11	PISTON	1	4700536314	2880 2930 66 01N
12	COMPRESSION SPRING	1	8962600004	2880 2930 87 01N

ASSEMBLY SERVICEABLE PART NUMBER DETAILS

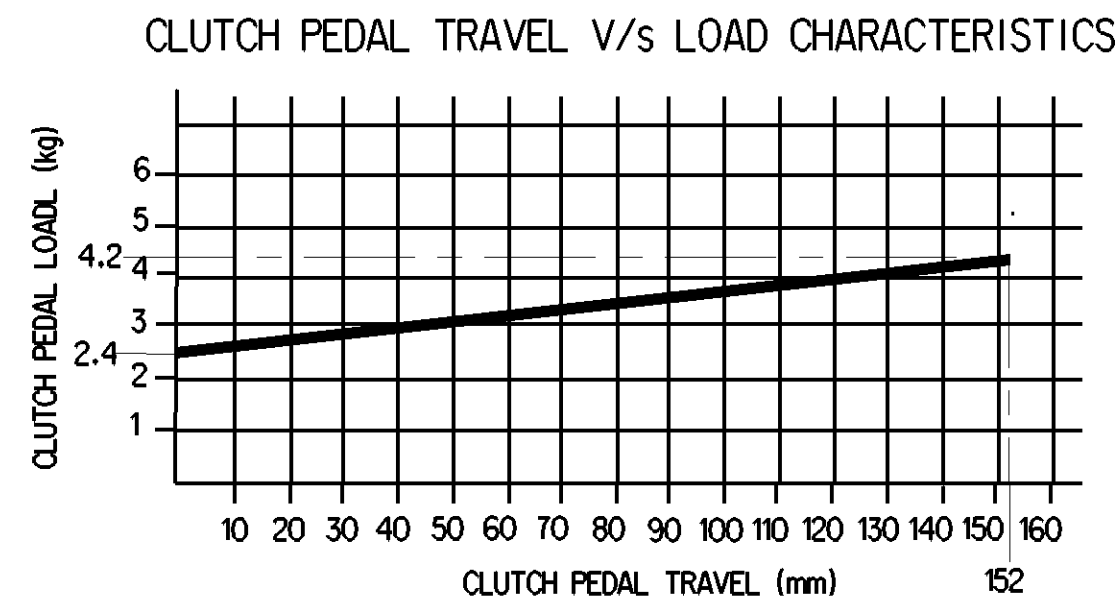
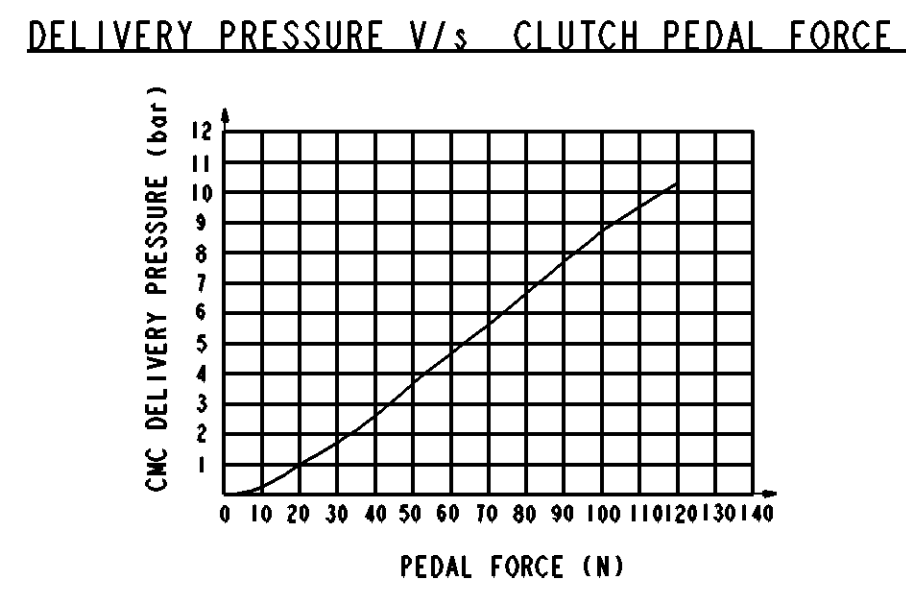
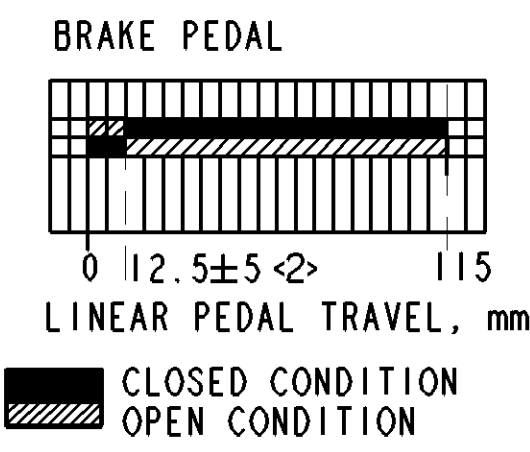
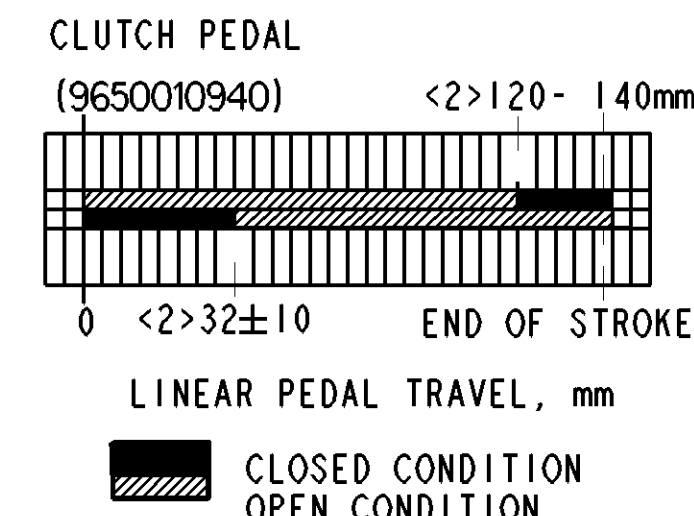
SERIAL NUMBER	DESCRIPTION	WABCO PART NUMBER	QUANTITY	T.M.L PART NUMBER	REMARKS
1	BRAKE SWITCH ASSEMBLY	9659055312	1	2880 5450 99 02N	
2	CLUTCH SWITCH ASSEMBLY	9659055302	1	2880 5450 99 01N	
3	CLUTCH MASTER CYLINDER	4700530310	1	2880 2930 01 07N	
4	DUAL BRAKE VALVE	4611000100	1	2880 4370 02 51N REF DRG-2880 4370 04 10	FBV FOR 9650010940 WITH AUXILIARY PART (FIG-5)
5	BRAKE PEDAL ASSEMBLY	9659052122	1	5519 2910 01 07N	
6	CLUTCH PEDAL ASSEMBLY	9659052102	1	5519 2910 01 06N	

A MINOR KIT

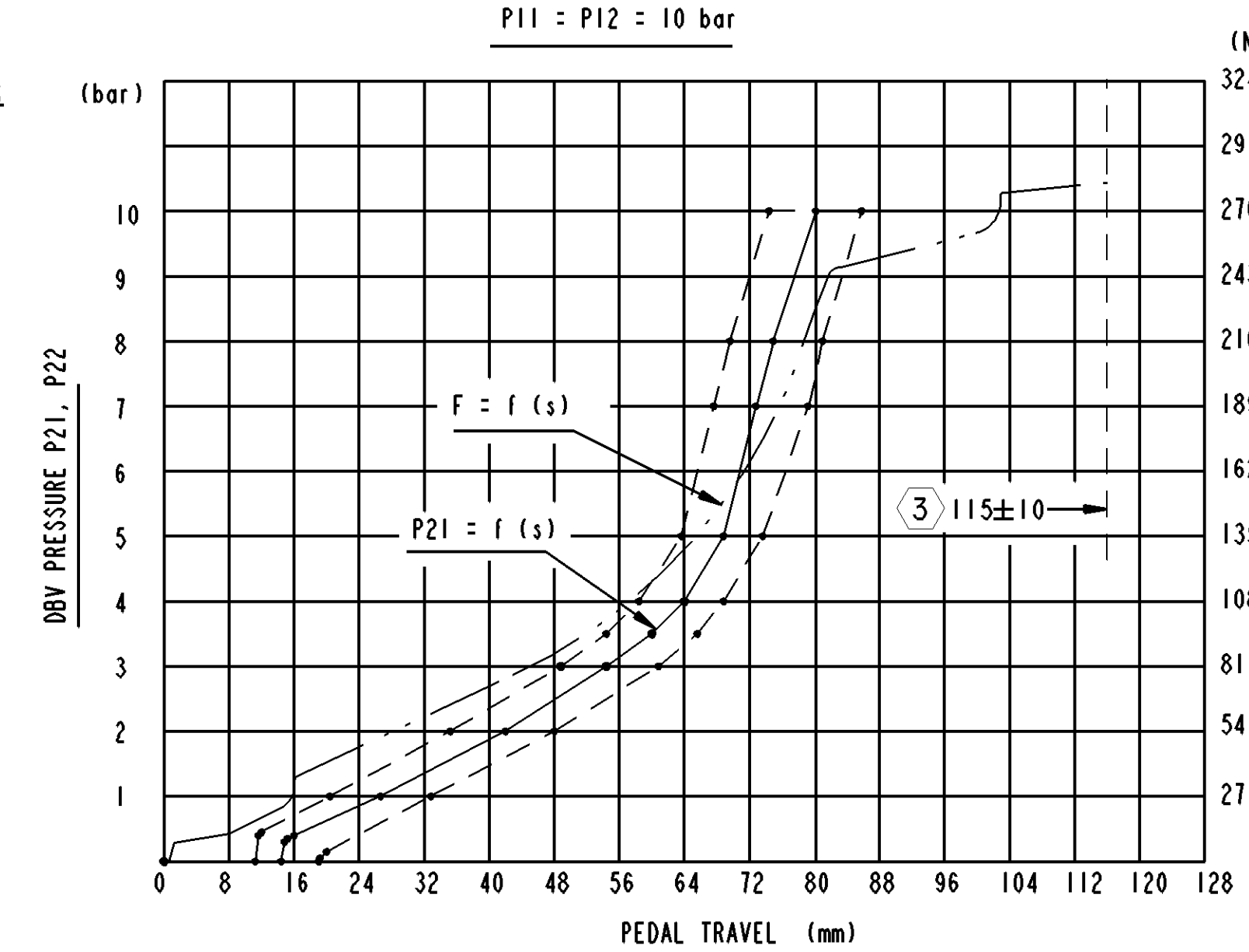
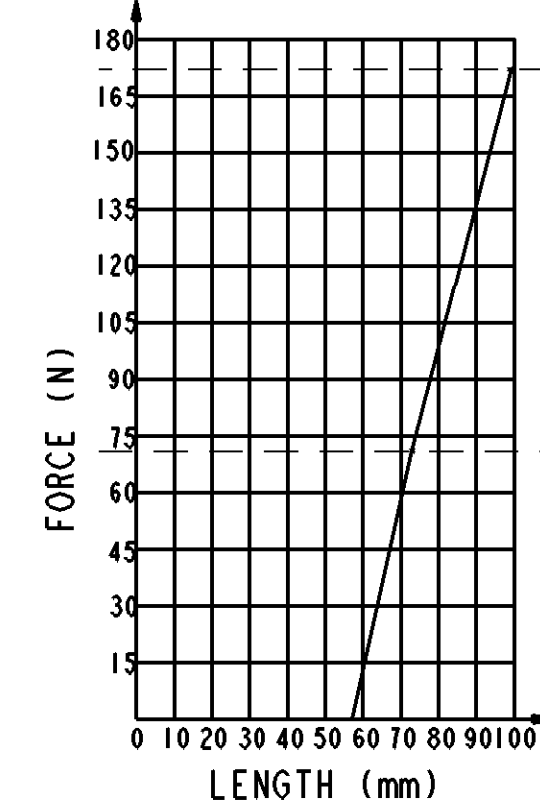
SERIAL NUMBER	DESCRIPTION	WABCO PART NUMBER	QUANTITY	T.M.L PART NUMBER
7	GASKET	9650014444	1	2880 2930 53 03N
8	SPRING	8961700004	2	2880 2930 87 02N
9	BRAKE CAM ASSEMBLY	9650010722	1	2880 2920 01 01N
10	BRAKE CAM ASSEMBLY	9650010732	1	2880 2920 01 02N
11	BOOT - DBV	9650014534	1	5006 2920 75 01N
12	PEDAL STOPPER	9650016122	3	2880 2930 99 05N
13	GUIDE RING	9700014104	1	2880 2930 99 03N
14	SPLIT PIN	8105110274	2	2642 4370 67 01N
15	PIN	9659077194	2	2880 2930 67 01N
16	HYDRAULIC CONNECTOR ASSEMBLY	8931294224	1	2880 2930 01 03N
17	TANK ASSEMBLY	9659050202	1	2880 2930 01 04N
18	CLUTCH CAM ASSEMBLY	9650010742	1	2880 2930 01 06N
19	PEDAL COVER	9650014764	2	2880 2930 99 06N
20	PLAIN BEARING	8997598654	4	2880 2940 31 01N

MSP 6/44 - REPAIR KIT CONSISTS OF ITEMS AS SHOWN
T.M.L KIT NO- 2880 2930 01 05N
COMMON FOR ALL IPU VARIANTS

SWITCH CHARACTERISTICS



PEDAL RETURN SPRING CHARACTERISTICS



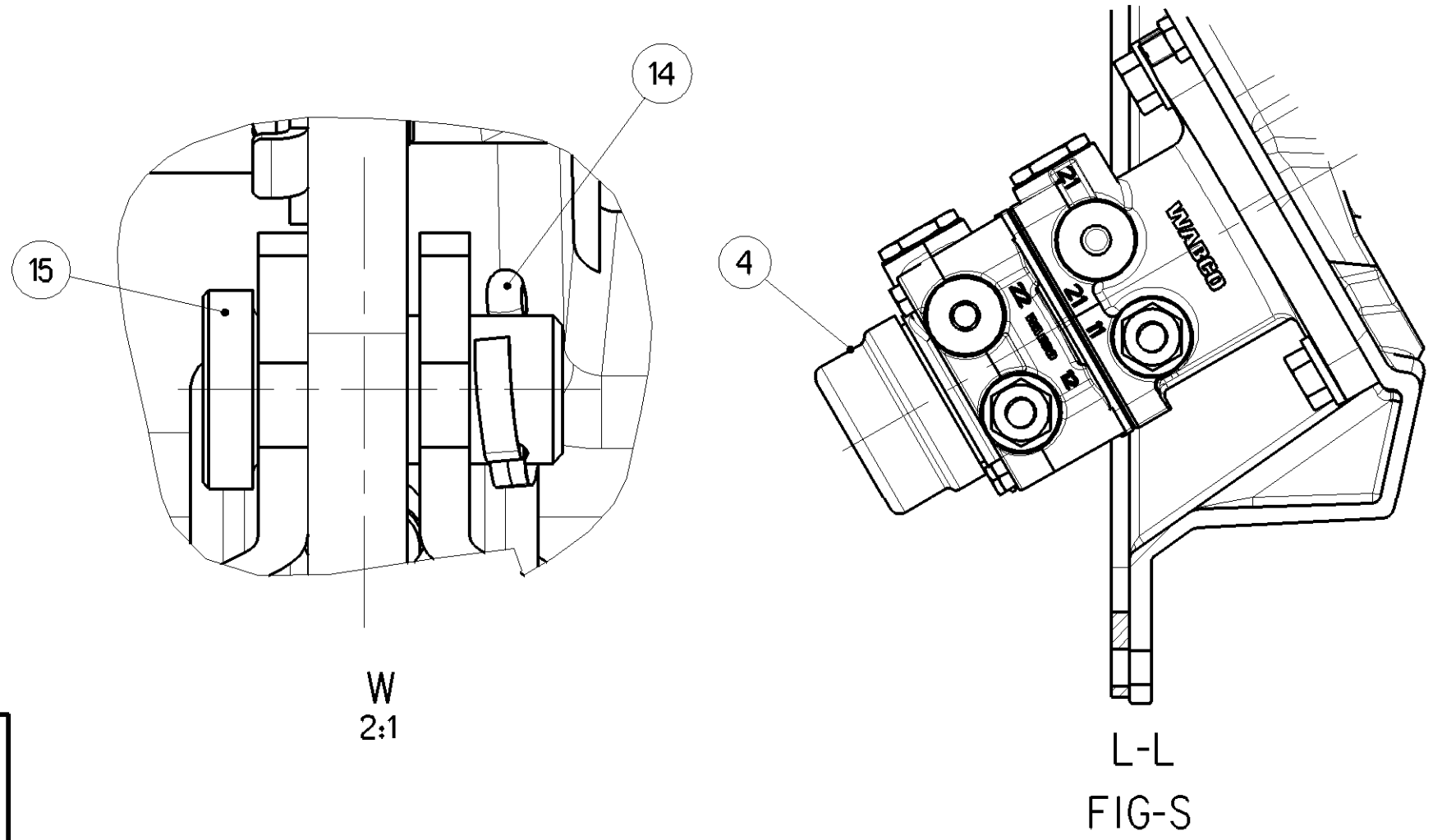
BRAKE PEDAL PERFORMANCE CHARACTERISTICS (3) STOP PROVIDED WITHIN DBV

SLNO	IPU GENERAL NOTES
1	PRODUCT FUNCTION AND RELIABILITY
1.1	PRODUCT SPECIFICATION No. PS 965 001 044 0
1.2	THERMAL RANGE OF APPLICATION -40°C TO +80°C
1.3	SURFACE TREATMENT ANODISING
2	WEIGHT 9.3 kg (APPROXIMATELY)
3	DVP TESTING AS AGREED WITH T.M.L
4	SERVICE LIFE TO FIRST OVERHAUL IF FITTED AS PER RECOMMENDED LAYOUT 5 YEARS / 500000 Km WHICHEVER IS EARLIER FOR TRUCK AND INTERCITY 3 YEARS / 300000 Km WHICHEVER IS EARLIER FOR CITY BUS APPLICATION
5	OPEN PORTS ARE FITTED WITH CLOSURE PLUGS FOR STORAGE AND TRANSIT PURPOSE
6	MAXIMUM CLUTCH PEDAL FORCE WITHOUT AIR ASSISTANCE TO CLUTCH SERVO 1000 N
7	MAXIMUM CLUTCH PEDAL FORCE WITH 7 bar AIR AIR ASSISTANCE TO CLUTCH SERVO 130 N
8	BRAKE PEDAL FORCE REQUIRED TO GENERATE 8 bar DELIVERY, SHOULD NOT EXCEED 345 N
9	SALT SPRAY TEST TO BE DONE ACCORDING TO ASTM B117
10	DELAY BETWEEN SIGNALS FROM THE TWO BRAKE SWITCHES WILL BE 300ms max. WHEN BRAKE PEDAL IS ACTUATED AT 17mm/s SPEED (MEASURED AT THE PEDAL PAD CENTER) DELAY BETWEEN SIGNALS FROM THE TWO BRAKE SWITCHES IN TERMS OF BRAKE PEDAL TRAVEL WILL BE 5mm max (MEASURED AT THE PEDAL PAD CENTER)

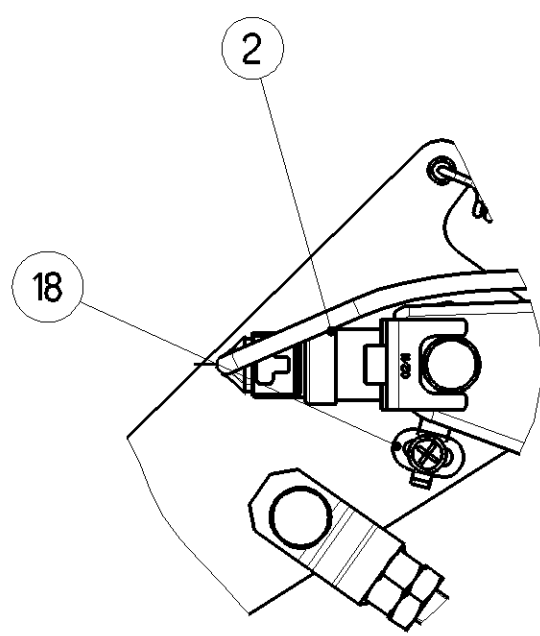
SLNO	CLUTCH MASTER CYLINDER NOTES
1	PRODUCT FUNCTION AND RELIABILITY
1.1	PRODUCT SPECIFICATION No. PS 470 053 006 0
1.2	WORKING MEDIUM BRAKE FLUID DOT 4 BASED BRAKE FLUID IN ACCORDANCE WITH SAE J1703
1.3	CYLINDER DIAMETER Ø26.125mm
1.4	WORKING HYDRAULIC VOLUME 19.2 CC
1.5	MAXIMUM FLUID PRESSURE 120 bar
1.6	RESERVOIR CAPACITY MIN - 83 cc MAX - 108 cc
1.7	CMC STROKE 36mm Max. RETURN SPRING FORCE 88N Max. DEAD STROKE 2±0.5mm

NOTE :
TIE CLIP / CABLE TIE TO BE PROVIDED AT INTERVAL OF APPROX. 200mm, TO AVOID STRETCHING OF WIRES (BRAKE AND CLUTCH SWITCH).

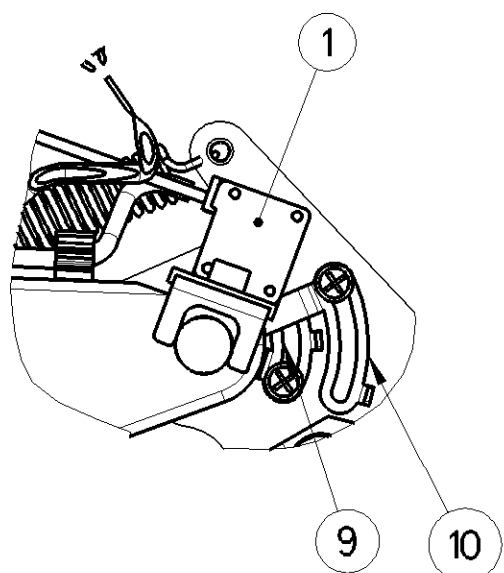
SL. NO	DUAL BRAKE VALVE NOTES
1	PRODUCT FUNCTION AND RELIABILITY
1.1	PRODUCT SPECIFICATION No. (ISSUE No:1 DATE 23.09.10) PS 461 100 010 0
1.2	PORT 11/12 AIR INLET
1.3	PORT 21/22 AIR DELIVERY
1.4	PORT 3 EXHAUST
1.5	WORKING MEDIUM AIR
1.6	NORMAL WORKING PRESSURE 10 bar
1.7	MAXIMUM WORKING PRESSURE (TEMPORARILY) 13 bar
1.8	NOISE LEVEL WHEN TESTED AS PER PSSC 220C 72 dBA
1.9	QUALITY COMPLIANCE TEST WILL BE CARRIED OUT REGULARLY AS PER CLAUSE 19 OF PS 461 100 010 0



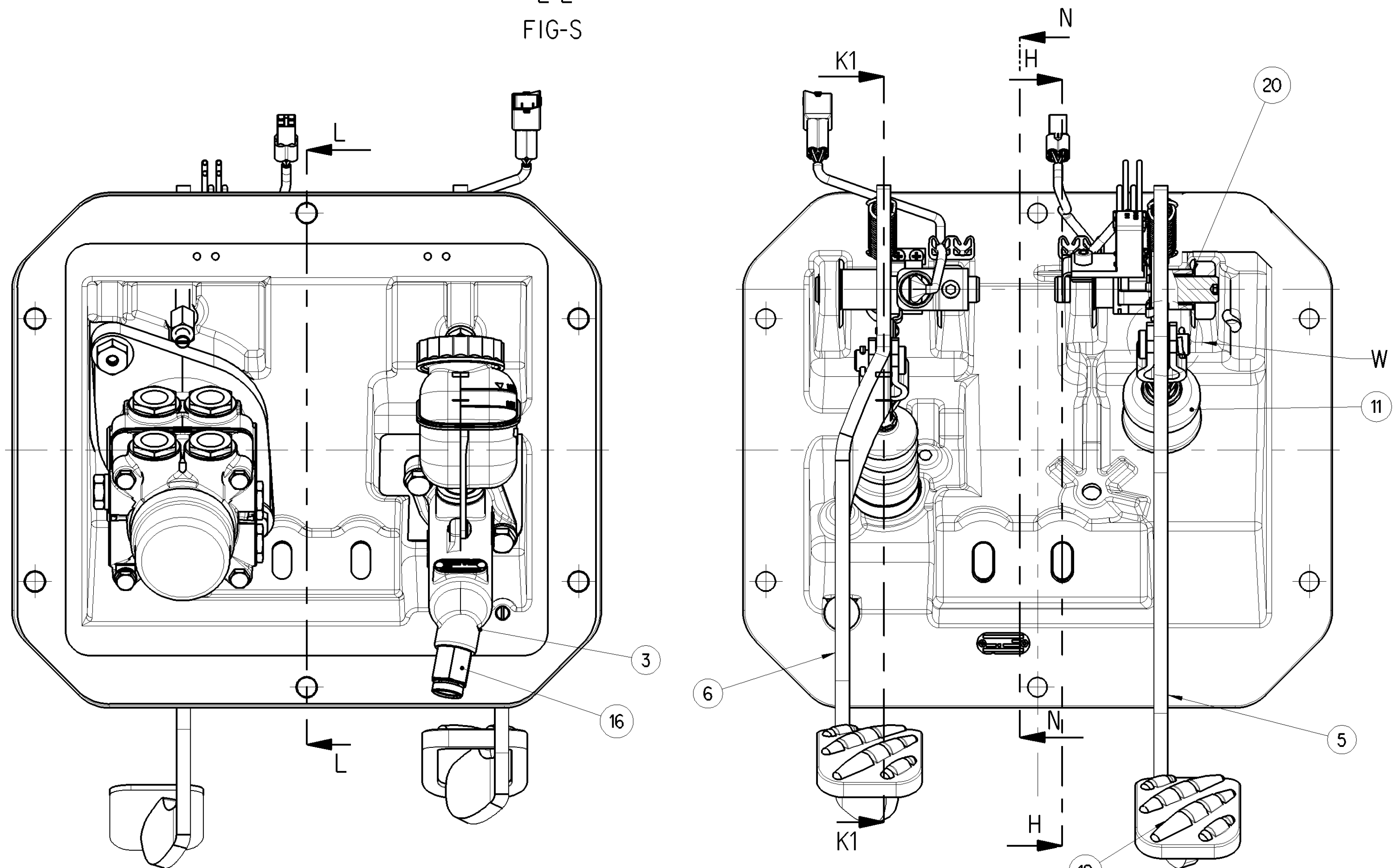
L-L FIG-S



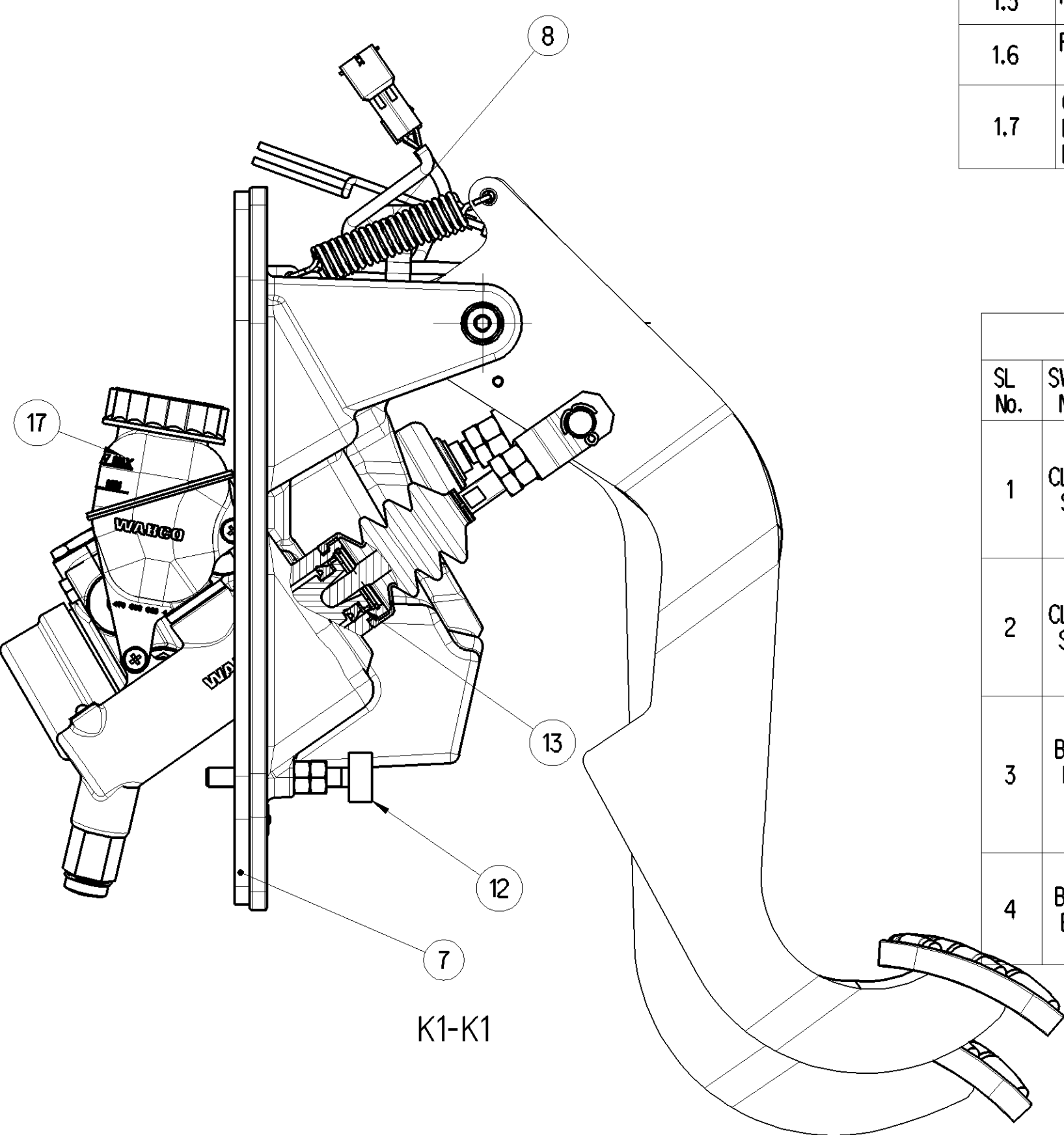
N-N



H-H



W



K1-K1

SL	SWITCH NAME	SWITCH DESCRIPTION	CONTACT CONFIG	LOADS	REQUIRED RATINGS	CONNECTOR DETAILS	PIN DETAILS (VIEW SHOWN FROM CONNECTING SIDE)	COLOR CODE
1	CLUTCH SW 1	C3 SWITCH 1	NC3	10mA at 6V, ECU (ELECTRONIC LOAD)	10mA at 6V, ECU (ELECTRONIC LOAD)	TATA YAZAKI / BESMAK CONNECTOR BESMAK CONNECTOR PARTNO-4W 090 FHOL/ TATA YAZAKI CONNECTOR HOUSING - T1220221 4 POLE 90 SERIES WP FEMALE CONNECTOR YAZAKI TERMINALS - 71141421 90 SERIES (0.75 - 1.5 mm ²) YAZAKI SEAL - 71573646		C2 R/B 0.75 C3 BR/G 0.75 NC2 G 0.75 NC3 BR 0.75
2	CLUTCH SW 2	C2 SWITCH 2	NO2	120mA at 24V	MIN 10mA & MAX 300mA at 24 V	90 SERIES FOR SIZE (0.75 - 1.5mm ²) PIG TAIL LENGTH TO BE 300mm PLUS CONNECTORS		
3	BRAKE BS 1	C3 SWITCH 1	NC	10mA at 6V, ECU (ELECTRONIC LOAD)	10mA at 6V, ECU (ELECTRONIC LOAD)	TATA YAZAKI / BESMAK CONNECTOR BESMAK CONNECTOR PARTNO-4W 090 FHOL/ TATA YAZAKI CONNECTOR HOUSING - T1230054 4 POLE 90 SERIES WP MALE CONNECTOR YAZAKI TERMINALS - 71141421 90 SERIES (0.75 - 1.5 mm ²) YAZAKI SEAL - 71573646		C2 B 0.5 C3 R 0.5 NC2 BL 0.5 NC3 Y 0.5
4	BRAKE BS 2	C2 SWITCH 2	NO	10mA at 6V, ECU (ELECTRONIC LOAD)	10mA at 6V, ECU (ELECTRONIC LOAD)	90 SERIES FOR SIZE (0.75 - 1.5mm ²) PIG TAIL LENGTH TO BE 300mm PLUS CONNECTORS		

General Specifications: 480-554-1, Size ISO 14464-1	Copyright WABCO®	WABCO
Further Technical Data: 2020-07-07, 2020-07-07, 2020-07-07	2020-07-07, 2020-07-07, 2020-07-07	2020-07-07, 2020-07-07, 2020-07-07
Doc. Code: 965 001 094 0	Doc. Code: 965 001 094 0	Doc. Code: 965 001 094 0
Size: 9.3	Size: 9.3	Size: 9.3
Material: A 0	Material: A 0	Material: A 0
Language: EN	Language: EN	Language: EN
Sheet: 2/2	Sheet: 2/2	Sheet: 2/2