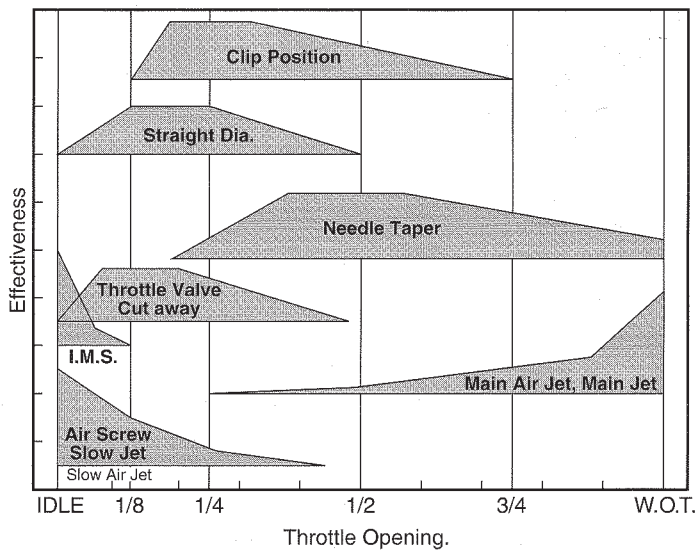


# CARBURETOR TUNING

## Calibration Chart ( for FCR, CRS, PWK, PJ, PE )

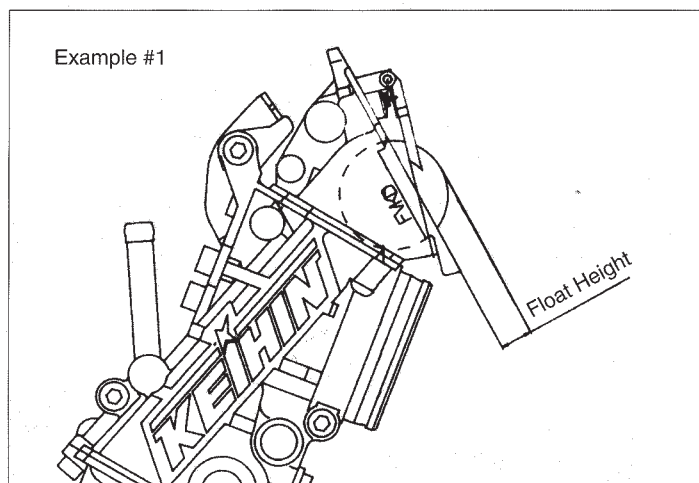


## Float Height

FCR	CR	PWK		PD	PD
ALL	ALL	28	35-39	26-30	36-39
9mm	14mm	19mm	16mm	12.5mm	22.5mm

PJ	PWM	PE		
ALL	38	24-38	30-34	36-39
16mm	6.5mm	14mm	20mm	22.5mm

NOTE: (See Jetting instruction #1) for correct procedure.



**NOTE:** If further information is needed, please contact your Keihin carburetor dealer.

## Jetting Your Slide Valve Carburetors

All Keihin carburetors are pre-jetted for bolt-on operation. Carburetors are jetted using stock motorcycles and watercrafts. Any major engine modifications like higher compression pistons and racing exhaust systems may require minor jetting adjustments. The following is a guideline for jetting Keihin carburetors. Perform the jetting in the order given below.

### 1) CORRECT FLOAT HEIGHT

Before changing any jetting parts, check the carburetor floats for correct height. Measure the height from the bottom of the float to the carburetor-body gasket surface. Correct height can be found on the chart. When checking the float height, the float should be resting, but not depressing, the spring-loaded float valve pin. This can be done by tilting the carburetor until the float tab just makes contact with the valve pin. If adjustment is needed, bend the metal tab on the float arm until correct height is obtained.—see example #1

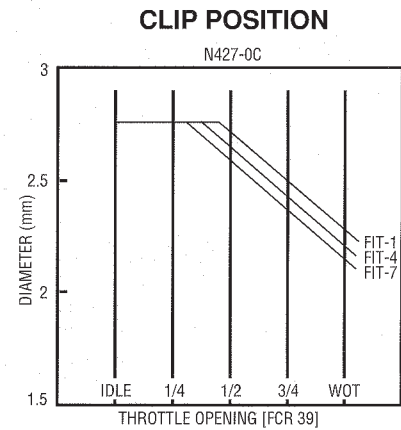
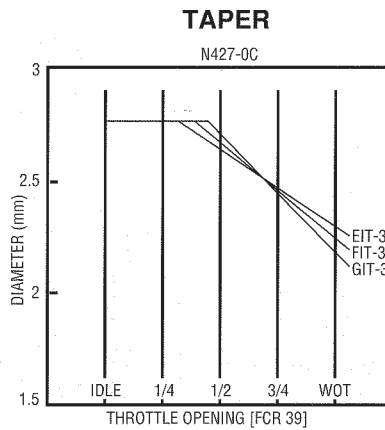
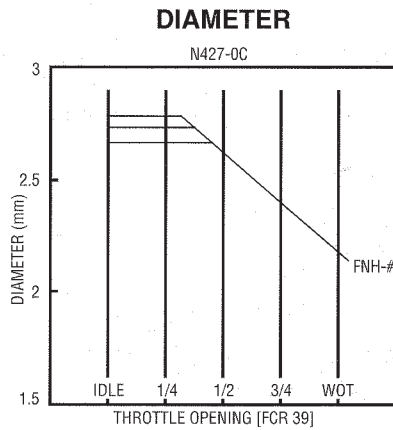
### 2) IDLE

Set idle speed to proper r.p.m. by adjusting the IDLE SPEED SCREW. Turn the IDLE MIXTURE SCREW or the AIR SCREW to achieve highest speed and best response. The IDLE MIXTURE SCREW (FCR) controls fuel delivery to the idle port and the SCREW is located on the engine side of the carburetor slide. Turning the IDLE MIXTURE SCREW out will make idle and off-idle richer. Turning IDLE MIXTURE SCREW (CR, PWK, PJ, PE) controls the amount of air to the IDLE and SLOW CIRCUIT. This SCREW is located on the air cleaner side of the throttle slide and turning the SCREW out will lean the mixture and turning the SCREW in (clockwise) will richen the mixture.

### 3) OFF IDLE TO 1/4 THROTTLE

The SLOW JET and SLOW AIR JET are most effective in this range. When you want a richer mixture in this range, use a larger SLOW JET or a smaller SLOW AIR JET. The opposite holds true for a leaner mixture.

# Jet Needle Changes



## 4) 1/4 TO 3/4 THROTTLE

The JET NEEDLE is the most effective component in the range. Changing the STRAIGHT DIAMETER (D) will change the calibration in the transition range from the SLOW circuit to the MAIN circuit (1/8 to 1/4) throttle. A smaller diameter will make this range richer and a larger diameter will lean this range. TAPER (A) changes are only made if there is a problem balancing the calibration between 1/4 and 3/4 throttle. If the mixture is rich at 1/4 throttle and lean at 3/4 throttle, a JET NEEDLE with a larger taper is needed. If mixture is lean at 1/4 throttle and rich at 3/4 throttle, change to smaller taper. If the calibration is lean from 1/4 to 3/4 throttle, raise the JET NEEDLE by lowering clip position, or use JET NEEDLE with shorter length (L1). If the calibration is rich, lower the JET NEEDLE with a longer (L1).

## 5) WIDE OPEN THROTTLE

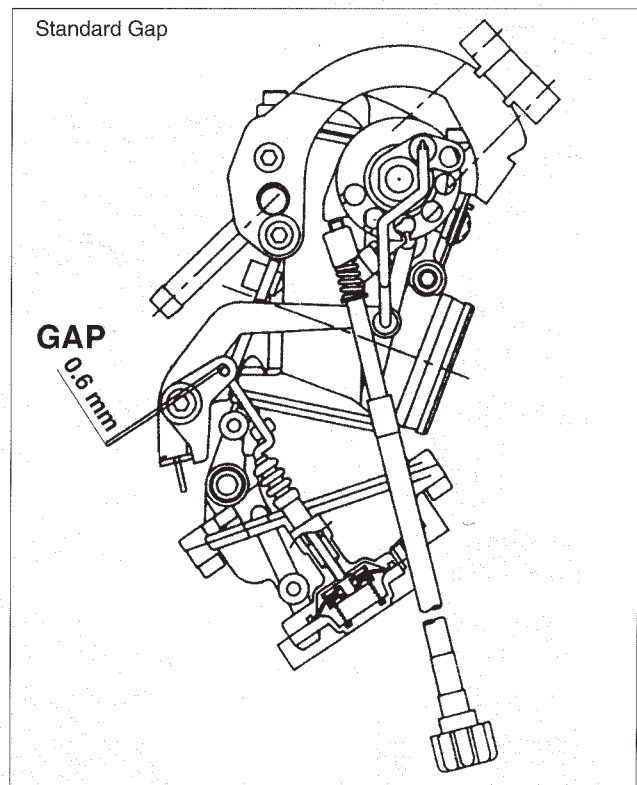
Changing the MAIN JET affects this range. Select the size of MAIN JET which offers the best W.O.T. performance, then install one size larger MAIN JET for ideal engine durability.

## 6) ACCELERATOR PUMP (for FCR)

In normal applications, the ACCELERATOR PUMP should not require any adjustment. If a rich stumble occurs as the throttles are opened, the ACCELERATOR PUMP timing can be delayed by widening the gap on the ACCELERATOR PUMP linkage where it makes contact with the plastic lever. Reducing the gap will cause the ACCELERATOR PUMP to deliver fuel earlier.

## 7) THROTTLE VALVE CUT-AWAY (FOR CR, PWK, PJ, & PE)

THROTTLE VALVE CUT-AWAY will influence the calibration in the area of 1/8 to 1/4 throttle. What the CUT-AWAY does is change the air velocity over the MAIN NEEDLE JET which changes when the MAIN SYSTEM begins delivering fuel. If the transition is lean change the throttle valve to a valve which has less CUT-AWAY (lower number). If this range is rich use a throttle valve with more valve CUT-AWAY (higher number).

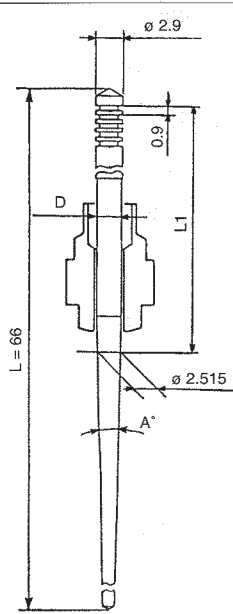


# Jet Needles

## PWK, PJ (34mm-39mm) Needle

PART NUMBER  
SERIES MARK  
N 4 2 7 - 4 8

MARK	TAPER: A	L1	DIAMETER: D
A	1°00'	34.55	2.605
B	1°15'	35.00	2.615
C	1°34'	36.35	2.625
D	1°45'	36.80	2.635
E	2°00'	38.15	2.645
F	2°15'	38.60	2.655
G	2°26'	39.95	2.665
H	2°45'	40.40	2.675
J	3°00'	41.75	2.685
K	3°15'	42.20	2.695
L	3°33'	43.55	2.705
M	3°50'	44.00	2.715
N	4°00'	45.35	2.725
P			2.735
Q			2.745
R			2.755
S			2.765
T			2.775
U			2.785
V			2.795
W			2.805
X			2.815
Y			2.825
Z			2.835



**NOTE:** Number 1 clip position is furthest from needle taper. The number after the three digits is clip position.

	TAPER				
	Leanest 1.00 degree	Leaner 1.25 degree	Standard 1.50 degree	Richer 1.75 degree	Richest 2.00 degree
2 Clip position Leaner	N/A	N/A	CGL-1	DGL-2	EGL-3
Standard	AJL-1	BGL-1	CGL-3 CEL-1	DGL-4 DEL-2	EGL-5 EEL-3 ECL-1
2 Clip position Richer	AJL-3 AGL-1	BGL-3 BEL-1	CGL-5 CEL-3	DEL-4 DCL-2	ECL-3
4 Clip position Richer	AJL-5 AGL-3 AEL-1	BGL-5 BEL-3	CEL-5	DCL-4	DGL-5
6 Clip position Richer	AGL-5 AEL-3	BEL-5	N/A	N/A	N/A

Straight diameter: F (2.655mm) L (2.705mm)  
 G (2.665mm) M (2.715mm)  
 H (2.675mm) N (2.725mm)  
 J (2.685mm) P (2.735mm)  
 K (2.695mm) Q (2.745mm)

# Jet Needles

## OEM-N427-48xxx Series Conversion Chart

### 1. HOW TO READ MARKS

1) MARK ON OEM JET NEEDLE [6 DIGITS]

R ? ? ? ? ? ?  
 ↑ ↑ ↑ ↑ ↑ ↑  
 TAPER | L1  
 DIAMETER

- 1st digit of MARK on OEM's tells you the KEIHIN P/No.. (R is for P/No. N427-48???)
- NEXT TWO DIGITS (2nd & 3rd) tell you TAPER angle.
- NEXT TWO DIGITS (4th & 5th) tell you DIAMETER of needle.
- LAST DIGIT (6th) tells you L1.

2) MARK ON OPTION JET NEEDLE [3 DIGITS]

? ? ?  
 ↑ ↑ ↑  
 TAPER | DIAMETER  
 L1

- 1st digit is for TAPER angle.
- 2nd digit is for L1.
- LAST digit is for DIAMETER.

### 2. CONVERSION TABLE

1) TAPER

OEM	OPTION
11	B
13	C
14	D
20	E
22	F
30	J

2) L1

OEM	OPTION
A	A
B	B
E	C
F	D
J	E
K	F
N	G
P	H
S	J
T	K
W	L
Y	M

3) DIAMETER

OEM	OPTION	OEM	OPTION
60	A	72	N
61	B	73	P
62	C	74	Q
63	D	75	R
64	E	76	S
65	F	77	T
66	G	78	U
67	H	79	V
68	J	80	W
69	K	81	X
70	L	82	Y
71	M	83	Z

### 3. EXAMPLES FOR CONVERSION

OEM NEEDLE	OPTION
R 1 1 6 6 J	→ B E G
R 1 3 6 8 N	→ C G J
R 1 4 7 0 N	→ D G L
R 2 0 7 2 N	→ E G N
↑ ↑ ↑ ↑ ↑	↑ ↑ ↑ ↑ ↑
TAPER   L1	TAPER   DIAMETER
DIAMETER	L1

The MARK ORDER of OEM needle is NOT the same as OPTION's. DO NOT FORGET IT!

### N84x, N85x JET NEEDLE TO N428-48xxx

OEM MARK	OPTION MARK	OEM MARK	OPTION MARK
N84A	CFF	N84I	CFP
N84B	CFG	N84J	CFQ
N84C	CFH	N84K	CFR
N84D	CFJ	N85A	CCF
N84E	CFK	N85B	CCG
N84F	CFL	N85C	CCH
N84G	CFM	N85D	CCJ
N84H	CFN	N85E	CCK

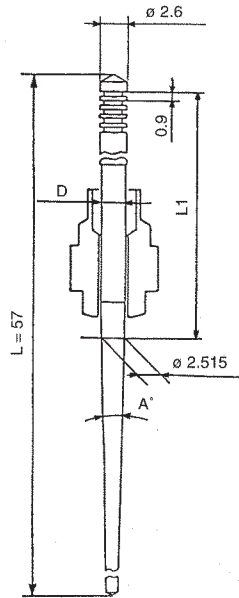
**NOTE:** N84x series are dual taper, N85x series are triple taper, therefore this chart will only give approximate comparison. Change main jet to two sizes larger with N428-48 series for N85 series.

# Jet Needles

## PE, PWK (26mm-28mm) Needles

PART NUMBER  
SERIES MARK  
N 4 2 7 - 4 6

MARK	TAPER: A	L1	DIAMETER: D
A	1°00'	18.20	2.365
B	1°15'	18.65	2.375
C	1°34'	20.00	2.385
D	1°45'	20.45	2.395
E	2°00'	21.80	2.405
F	2°15'	22.25	2.415
G	2°26'	23.60	2.425
H	2°45'	24.05	2.435
J	3°00'	25.40	2.445
K	3°15'	25.85	2.455
L	3°33'	27.20	2.465
M	3°50'	27.65	2.475
N	4°00'	29.00	2.485
P			2.495
Q			2.505
R			2.515
S			2.525
T			2.535
U			2.545
V			2.555
W			2.565
X			2.575
Y			2.585
Z			2.595



**NOTE:** Number 1 clip position is furthest from needle taper. The number after the three digits is clip position.

	TAPER		
	Leanest 3.00 degree	Standard 3.50 degree	Richer 3.75 degree
2 Clip position Leaner	N/A	LLQ-2	MLQ-2
Standard	JHQ-1	LLQ-4	MLQ-4
2 Clip position Richer	JHQ-3 JFQ-1	LGQ-2	MGQ-2
4 Clip position Richer	JHQ-5 JFQ-3	LGQ-4	MGQ-4
6 Clip position Richer	JFQ-5	N/A	N/A

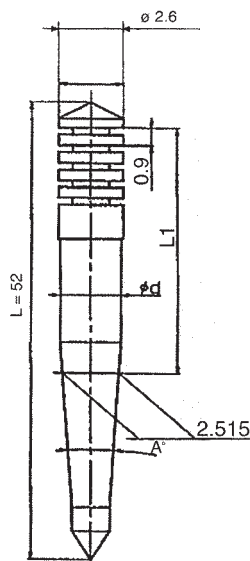
Straight diameter: L (2.465mm)  
N (2.485mm)  
Q (2.505mm)  
S (2.525mm)

# Jet Needles

## PE (20mm-24mm) Needles

PART NUMBER  
SERIES MARK  
N 4 2 7 - 4 5

MARK	TAPER: A	L1	DIAMETER: D
A	1°00'	19.82	2.365
B	1°15'	21.17	2.375
C	1°34'	21.62	2.385
D	1°45'	22.97	2.395
E	2°00'	23.42	2.405
F	2°15'	24.77	2.415
G	2°26'	25.22	2.425
H	2°45'	26.57	2.435
J	3°00'	27.02	2.445
K	3°15'	28.37	2.455
L	3°33'	28.82	2.465
M	3°50'	30.17	2.475
N	4°00'	30.62	2.485
P			2.495
Q			2.505
R			2.515
S			2.525
T			2.535
U			2.545
V			2.555
W			2.565
X			2.575
Y			2.585
Z			2.595





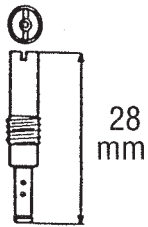
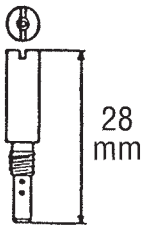
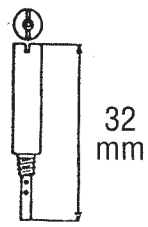
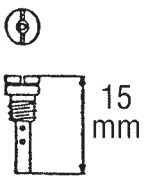
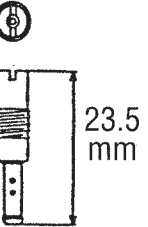

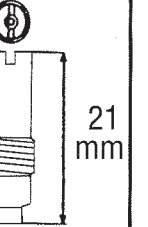
# JET LIST

**NOTE:** To order jets, specify Series number and Jet size.

Example [N424-21050 is for size #50 of N424-21 series.]



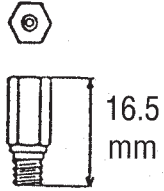


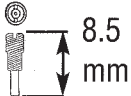
**NOTE:** To order jets, specify Series number and Jet size.

Example [99101-124-150 is for size #150 of 99101-124 series.]

Jet Series	N424-21	N424-22	N424-24	N424-25B		N424-26	N424-35		N424-32
									
<b>Jet Sizes Available</b>	035 038 040 042 045 048 050 052 055 058 060 062 065 068 070 072 075 078 080	035 038 040 042 045 048 050 052 055 058 060 062 065 068 070 072 075 078 080	035 038 040 042 045 048 050 052 055 058 060 062 065 068 070 072 075 078 080	35 38 40 42 45 48 50 52 55 58 60 62 65 68 70 72 75 78 80	82 85 88 90 92 95 098	035 038 040 042 045 048 050 052 055 058 060 062 065 068 070 072 075 078 080	035 038 040 042 045 048 050 052 055 058 060 062 065 068 070 072 075 078 080	082 085 088 090 092 095 098 100 105 110 115 120	045 048 050 052 055 058 060 062 065
<b>Application</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>	<b>(SLOW JET)</b>
<b>AFTER MARKET</b>	FCR-MX		CRS	FCR					
<b>HONDA</b>	PJ, PWM (Motocross) (ATV)	PJ (Motocross)							PE 24 (Motocross)
	PE 20,22,26-30 (Motocross) (ATV)	PE 34-38 (Motocross)							
<b>KAWASAKI</b>	PWK (Motocross)	CVK-V (V-Engine)					CDK, CDKII CDCV		
<b>HARLEY</b>				BH (Non CV Type) BD (Screamin' Eagle)					
<b>YAMAHA</b>				BD (Snowmobile)					

- N424-25 series has 0.6 mm bleed (cross) holes.  
When it is used for KAWASAKI CV, CVK or Harley CVH, bleed (cross) holes should be modified to 0.8 mm (dia.).
- If your jet is 99101-MA4 series, you can use N424-26 series.
- If your jet is 99101-441 series, you can use N424-22 series.

# Jet List

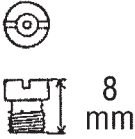


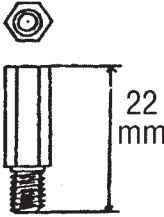
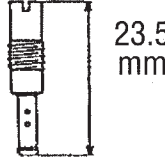
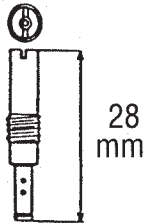
Jet Series	N424-36		99101-124 <small>OLD #89101-ZF5</small>		99101-357			99101-393			1001-806		N424-52
													
<b>Jet Sizes Available</b>	90	145	50	105	60	115	170	60	115	180	90	148	035
	92	148	52	108	62	118	172	62	118	185	92	150	040
	95	150	55	110	65	120	175	65	120	190	95	152	045
	98	152	58	112	68	122	178	68	122	195	98	155	048
	100	155	60	115	70	125	180	70	125	200	100	158	050
	102	158	62	118	72	128	182	72	128		102	160	052
	105	160	65	120	75	130	185	75	130		105	165	055
	108	165	68	125	78	132	190	78	132		108	170	058
	110	170	70	130	80	135	195	80	135		110	175	060
	112	175	72	135	82	138	200	82	138		112	180	062
	115	180	75	140	85	140	205	85	140		115	185	065
	118	185	78	145	88	142	210	88	142		118	190	068
	120	190	80	150	90	145	215	90	145		120	195	070
	122	195	82		92	148	220	92	148		122	200	072
	125	200	85		95	150	225	95	150		125	210	075
	128		88		98	152	230	98	152		128	220	080
	130		90		100	155		100	155		130	230	082
	132		92		102	158		102	158		132	240	085
	135		95		105	160		105	160		135	250	088
	138		98		108	162		108	165		138		090
	140		100		110	165		110	170		140		092
	142		102		112	168		112	175		145		095
<b>Application</b>	<b>(MAIN JET)</b>		<b>(SLOW AIR JET)</b>		<b>(MAIN JET)</b>			<b>(MAIN JET)</b>			<b>(MAIN JET)</b>		<b>(ACCL. PUMP JET)</b>
<b>AFTER MARKET</b>			FCR		FCR, FCR-MX, CRS			FCR (MAIN AIR JET)					
<b>HONDA</b>					PD (Dual Purpose) PE-34-38PE (Motocross) PJPDVG (Motocross) (ATV)			CVVD (Road Bike) (V-Eng) 26-30 VB VE (Motocross)(Sidedraft) (Motocross)(Downdraft) VA					FCR-MX (Motocross)
<b>KAWASAKI</b>	CDK, CDKII (Jet Ski)				PWK (Motocross)			CV, CVK (Road Bike)					
<b>HARLEY</b>					BD (Screamin' Eagle)						BH (Non CV Type)		
<b>YAMAHA</b>					BD (Snowmobile) PWM(Motocross)			CVK (Road Bike)					FCR-MX (Motocross)

**NOTE:** • N424-36 has the same profile as 99101-393, but is plated for water craft usage to prevent corrosion. Therefore, 99101-393 should not be used on CDK II carburetors.



# Jet List

**NOTE:** To order jets, specify Series number and Jet size.  
 Example [N424-27-150 is for size #150 of N424-27 series.]

Jet Series	N424-27	99101-116		N424-25B		N424-14		99103-420	N424-74C
	 8 mm	 7 mm		 15 mm		 22 mm		 23.5 mm	 28 mm
<b>Jet Sizes Available</b>	150 155 160 165 170 175 180 185 190 195 200 205 210 220 230 240 250	50 52 55 58 60 62 65 68 70 72 75 78 80 82 85	88 90 92 95 98 100 105 110 115 120	035 038 040 042 045 048 050 052 055 058 060 062 065 068 070 072 075 078 080	082 085 088 090 092 095 098	40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220	230 240 250 260 280	32 35 38 40 42 45 48 50 52	035 038 040 042 045
<b>Application</b>	<b>(MAIN JET)</b>	<b>(MAIN JET)</b>		<b>(SLOW JET)</b>		<b>(MAIN AIR JET)</b>		<b>(SLOW JET)</b>	<b>(SLOW JET)</b>
<b>AFTER MARKET</b>				FCR		CRS			
<b>HONDA</b>		PB (Small ATV)						VB (Side Draft)	
<b>KAWASAKI</b>	CDCV 40/44			CVK					(V2 ATV)
<b>HARLEY</b>	CVH (CV Type)			CVH					
<b>YAMAHA</b>				CVK					

**NOTE:**

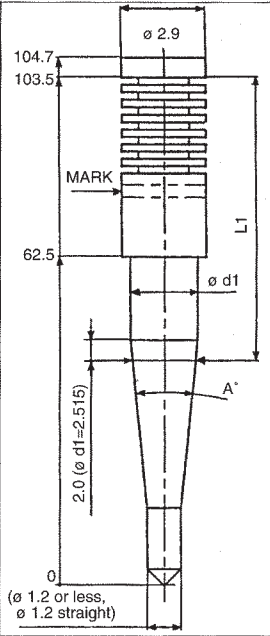
- 99103-420 series has 0.6mm bleed (cross) holes.
- Can be used as a 99103-MA1 or 99103-MA4 if bleed (cross) holes are drilled to .7mm or .8mm respectively.
- N424-25B series has 0.8mm bleed (cross) holes.

# Jet Needles

## FCR, FCR-MX (35mm-41mm) Needles

PART NUMBER  
SERIES MARK  
N 4 2 7 - O C

MARK	TAPER: A	L1	DIAMETER: d1
A		74.20	2.605
B		74.65	2.615
C		75.10	2.625
D	0°45'	75.55	2.635
E	1°00'	76.00	2.645
F	1°15'	76.45	2.655
G	1°30'	76.90	2.665
H	1°45'	77.35	2.675
J	2°00'	77.80	2.685
K	2°15'	78.25	2.695
L	2°30'	78.70	2.705
M	2°45'	79.15	2.715
N	3°00'	79.60	2.725
P	3°15'	80.05	2.735
Q	3°30'	80.50	2.745
R	3°45'	80.95	2.755
S	4°00'	81.40	2.765
T	4°15'	81.85	2.775
U	4°30'	82.30	2.785
V	4°45'	82.75	2.795
W	5°00'	83.20	2.805
X		83.65	2.815
Y		84.10	2.825
Z		84.55	2.835



**NOTE:** Number 1 clip position is furthest from needle taper. The number after the three digits is clip position.

	TAPER		
	Leaner 0.75 degree	Standard 1.00 degree	Richer 1.25 degree
4 Clip position Leaner	N/A	EMR-1	FHR-2
2 Clip position Leaner	DTR-1	EMR-3	FHR-4 FBR-1
Standard	DTR-3	EMR-5 EFR-2	FHR-6 FBR-3
2 Clip position Richer	DTR-5 DMR-2	EMR-7 EFR-4	FBR-5
4 Clip position Richer	DTR-7 DMR-4 DFR-1	EFR-6 EBR-4	FBR-7
6 Clip position Richer	DMR-6 DFR-3	EBR-6	N/A

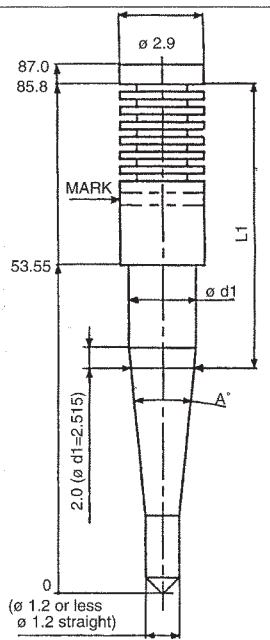
Straight diameter:  
M (2.715mm)  
P (2.735mm)  
R (2.755mm)  
T (2.775mm)  
V (2.795mm)

# Jet Needles

## FCR (32mm-33mm) Needles

PART NUMBER  
SERIES MARK  
N 4 2 7 - 9 0

MARK	TAPER: A	L1	DIAMETER: d1
A		58.25	2.605
B		58.70	2.615
C		59.15	2.625
D	0°45'	59.60	2.635
E	1°00'	60.05	2.645
F	1°15'	60.50	2.655
G	1°30'	60.95	2.665
H	1°45'	61.40	2.675
J	2°00'	61.85	2.685
K	2°15'	62.30	2.695
L	2°30'	62.75	2.705
M	2°45'	63.20	2.715
N	3°00'	63.65	2.725
P	3°15'	64.10	2.735
Q	3°30'	64.55	2.745
R	3°45'	65.00	2.755
S	4°00'	65.45	2.765
T	4°15'	65.90	2.775
U	4°30'	66.35	2.785
V	4°45'	66.80	2.795
W	5°00'	67.25	2.805
X		67.70	2.815
Y		68.15	2.825
Z		68.60	2.835



**NOTE:** Number 1 clip position is furthest from needle taper. The number after the three digits is clip position.

	TAPER		
	Leaner 1.00 degree	Standard 1.25 degree	Richer 1.50 degree
4 Clip position Leaner	N/A	FTR-1	GTR-3
2 Clip position Leaner	N/A	FTR-3	GTR-5 GKR-1
Standard	ETR-2	FTR-5 FKR-1	GTR-7 GKR-3
2 Clip position Richer	ETR-4	FTR-7 FKR-3	GKR-5 GBR-1
4 Clip position Richer	ETR-6 EKR-2	FKR-5 FBR-1	GKR-7 GBR-3
6 Clip position Richer	EKR-4	FKR-7 FBR-3	GBR-5
8 Clip position Richer	EKR-6 EBR-2	FBR-5	GBR-7
10 Clip position Richer	EBR-4	FBR-7	N/A

Straight diameter:  
M (2.715mm)  
P (2.735mm)  
R (2.755mm)  
T (2.775mm)  
V (2.795mm)



